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A
YEAR - BOOK
OF
THERAPEUTICS, PHARMACY
AND ALLIED SCIENCES.

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NEW REMEDIES.

THERAPEUTICS.

TREATMENT OF INFLAMMATION.

BY DR. CHAS. MURCHISON.

1. REMOVE, if possible, the cause of the inflammation. This is the first object always to be aimed at. If it can be effected it will do more good than all the other remedies put together.

2. Prevent as far as possible any further stimulus to the inflamed part. Remove light from the inflamed eye and sound from the inflamed ear, and prevent food from entering the inflamed stomach.

3. Always endeavor to discover the constitutional peculiarities of the individual, and remember that for some varieties of inflammation we possess what may be called specific remedies. Mercury will cure the inflammations of constitutional syphilis, and colchicum with alkalis those of gout. Iodide of potassium seems to act in a specific manner upon periosteal inflammations, chlorate of potash on ulcerative stomatitis, and arsenic on certain inflammations of the skin. Much difference of opinion, as you are aware, has existed on the utility of mercury in inflammation. At one time most patients with inflammation were salivated, whereas now the drug is almost universally condemned, not only as useless, but as positively injurious. The main cause of those differences of opinion which still exist on the matter is

to be found in the non-recognition of the constitutional varieties of inflammation. In rheumatic pericarditis mercury has been proved, times without number, to be useless, and in the many inflammations to which persons with disease of the kidneys are liable it is always hurtful; but in syphilitic iritis, and syphilitic inflammation of the lungs, liver, or other organs, mercury often acts like a charm. I am speaking now of the constitutional effects of mercury when given in frequent small doses. As an occasional aperient, or in conjunction with opium to counteract its constipating effect, mercury may be useful in other forms of inflammation than the syphilitic.

4. Moderate vascular action in the inflamed part; but, in attempting to do this, keep in view the general condition of the patient. Remembering that increased vascular action is in most instances the chief phenomenon marking the origin and spread of inflammation, it is clear that one of the chief objects in treatment must be to reduce the quantity of blood, and the rapidity of its circulation in the inflamed part. The principal measures which have been recommended for this purpose are as follows:—

a. Blood-letting.—According to the manner in which the blood is drawn, blood-letting is said to be either *general* or *local*. Blood-letting, both general and local, was at one time the universal treatment for inflammation, but is now one of the rarest of surgical operations. An attempt has been made to account for this revolution in medical practice on the supposition that inflammations had changed their type; that formerly they were sthenic and required blood-letting, but that now they are asthenic and are injured by depletion. This view of the matter is untenable; and I need only now repeat that in some parts of the world it is still the fashion to treat inflammations by copious blood-letting, and that it is difficult to imagine how the type of inflammation could have changed in one country and not in another. There can be no doubt that much mischief was done in former days by copious general bleedings in inflammation. In order to diminish effectually the quantity of blood in the inflamed part through the general circulation, it is necessary to take such a quantity of blood that its quality becomes impoverished, while the heart's action is weakened and the reparative powers of the system are impaired. But the same objection does not apply to local bleedings. In many of the inflammations at or near the surface of the body which come under the notice of the surgeon, the effect of local bleeding in relieving pain, diminishing congestion, and otherwise moderating the intensity of the inflammatory process, is so immediate and marked that it is difficult to understand the modern antipathy in this country to blood-letting in any form. It is argued that the loss of even a small quantity of blood weakens the en-

ture system, and especially impairs the vitality of the inflamed part; but such statements have been chiefly advanced by writers who have had little or no experience of the effects of blood-letting themselves, and are, as I think, contrary to the evidence of our senses, while repeatedly you will have occasion to observe that a congestion of the brain or of the lungs is at once relieved by a natural hemorrhage—by a copious epistaxis or hæmoptysis. There is one important difference, however, as regards local bleeding, between an inflammation of some internal organ and one on the outer surface of the body. In the latter case there is no difficulty in understanding how local bleeding diminishes the quantity of blood in the inflamed part, but it is not so in the former. Yet, on calm consideration, you must see that it is not necessary for local depletion to act beneficially that it should do so through the general circulation. It may do so through the nearest arterial trunk, which is in common to the external surface and the inflamed organ. The intercostal artery can only transmit a certain amount of blood, and when the blood is made to flow from its superficial branches, less will go to the deeper branches. But whatever be the explanation, there can be no doubt of the clinical fact that the intensity of inflammation may often be moderated by local blood-letting, and this, too, without any injury to the patient. In inflammations, for example, of the liver or intestines, I have repeatedly observed the most marked and immediate relief follow the application of leeches to the abdomen or around the anus. Still, you must not have recourse to blood-letting in every case of inflammation. It is only in the early stages of inflammation, or when it is advancing, that you can expect it to do good. You must also abstain from blood-letting in persons of debilitated constitution, or when the inflammation has been excited by an animal poison or some other morbid condition of the blood.

b. Cold.—The common practice in this country is to apply moist heat to an inflamed part on the surface of the body from the very commencement; but it does not appear to me that any scientific reason can be given for the practice. Heat increases determination of blood to a part, and therefore seems calculated to increase the inflammation; whereas cold constricts the vessels and diminishes the supply of blood, and in Germany more especially has been found most efficacious in subduing inflammation. On this subject I would advise your reading an admirable essay by Professor Esmarch of Kiel, entitled *On the Use of Cold in Surgery*. Professor Esmarch declares that of all remedies for surgical inflammations it is most important, and that without it he would rather not be a surgeon. The continuous application of cold by means of ice-bags has also been found very efficacious in some inflammations which come under the care of the physician, as in rheumatic inflam-

mation of the joints, and inflammations of internal parts which are near the surface, as the pericardium and peritonæum. But in deep-seated inflammations, cold to the surface may act injuriously by driving blood from the skin to the inflamed part. Cold is also contra-indicated when the inflammatory process is subsiding, and when we have to deal solely with its products. Under these circumstances—

c. External Heat, in the form of poultices and fomentations, will be preferable, by means of which we hope to produce a derivation of blood from the part to the skin.

d. Counter-irritation by sinapisms, turpentine stupes, and blisters, acts in a similar manner to external heat, and is often of great utility. One caution I would give you respecting blisters: they are often applied in the early stage of inflammation; and when this is near the surface, as in pleurisy, pericarditis, or peritonitis, the irritation may be propagated inward, and increase the mischief which they are intended to allay. It is in chronic inflammations that blisters are most useful.

e. Purgatives were at one time used to a mischievous extent in all inflammations; but in inflammations of certain parts of the body they certainly act most efficaciously, by causing a derivation of blood from the inflamed part. In inflammatory affections of the liver, the best treatment is often free purgation. Purgatives in moderation are also useful as one means of eliminating from the body the products of inflammatory pyrexia.

f. Position may modify the amount of blood in any inflamed part. When a limb is inflamed, you take care not to let it hang down; when there is inflammation within the cranium, it is well to keep the head raised; and when there is inflammation of the spinal cord or its membranes, the patient had better not lie on his back.

g. Belladonna, when applied locally to an inflamed part, causes constriction of the vessels, diminishes the supply of blood, and often gives great relief; but in the case of internal inflammations there is no reason to think that belladonna entering the blood would exert its constricting effect on the vessels in the inflamed in preference to those of any other part.

5. *Aconite* is often of great value for reducing the pulse and temperature in the pyrexia of inflammation, and *antimony* is especially useful in the same way in inflammations of the mucous membrane of the air passages, where it also appears to relieve congestion by promoting free transudation to the free surface of the inflamed membrane. Antimony is contraindicated when the heart's action is weak. As regards diet and stimulants, you must be guided by the same rules in inflammation as in pyrexia. In the advanced stages of inflammation, and

especially when there is suppuration, ulceration, or gangrene, it will be necessary to give abundance of nutritious food and to stimulate freely. Under these circumstances, also, benefit will be derived from quinine, iron, and the mineral acids.

6. *Sedatives*, but particularly *opium* and its preparations, are often of great use in inflammations, for relieving pain, procuring sleep, keeping the inflamed parts at rest, and rendering them less irritable. In acute inflammation of the peritonæum, opium in large and repeated doses is a remedy on which we mainly rely; but opium in any form ought never to be given in inflammation of the kidneys, and only with the greatest caution in inflammatory affections of the lungs. In the former case it increases the difficulty which the inflamed kidneys have already to contend with in eliminating the products of pyrexial metamorphosis; in the latter, it leads to the accumulation in the bronchi of inflammatory products, and thus favors a fatal termination by apnoea.

7. Lastly, in the treatment of inflammations you must ever keep in view the dangers likely to arise from derangement of the functions of the inflamed part. In gastritis you will beware of irritating the stomach by drugs or by inappropriate food or stimulants, and in extreme cases you will give nutriment for a time entirely by the rectum; in enteritis you will check diarrhoea; in laryngitis you will be prepared to admit air to the lungs by tracheotomy; in accumulations of inflammatory products in the pleura you will consider the propriety of paracentesis; and when the lungs are so extensively inflamed or congested that the portion which remains free does not suffice to transmit the blood of the entire body, and the patient is threatened with asphyxia, you must not scruple in having recourse to venesection.—*British Med. Journal*.

STUDY OF THE PHYSIOLOGICAL ACTION OF DIGITALIS AND DIGITALIN.

BY DR. RUDOLF BOEHM.

IN the February number (1872) of *Pflüger's Archiv für die Gesamte Physiologie* is a paper with the above title, of some 40 pages in length, of which we give the following extended abstract:—

Directly after the discovery by Weber and Ludwig of the inhibitory action of the vagus, appeared Traube's first work on digitalis,* in which he asserted that in medicinal doses it excited, in large doses first

* *Versuche über die Wirkung der Digitalis*, abgedruckt aus dem 2 Jahrgang der *Charité Annalen*, 1851.

excited and then paralyzed the heart's regulo-motor nervous system, and that in the latter case the musculo-motor nervous system partook of the paralysis.

Near the same time Stannius * experimented upon frogs, and came to the conclusion that in these animals only the heart was affected by digitalis and that it in a short time came to a standstill, and could not be re-excited, a result that Stannius attributed to paralysis of the heart's muscle. Traube asserted, however, that such paralysis failed entirely to be possible, because after the first pulse-slowness there was a period of rapid pulse before the development of the paralysis. Further, it seemed impossible to him to believe otherwise than that the regulo-motor nervous system was excited, for when the vagus had been previously cut, in most cases digitalis failed to slow the pulse. In some instances this was not the case, a fact which Traube explained by the supposition that the single section of the vagus failed entirely in such animals to separate the heart from the inhibitory nerve centres.

After the dissertation of Lenz † Traube ‡ published a second memoir, in which he arrived at the following conclusions:—

In the general action of the poison on the circulation a stage is observed, first, in which the pulse-frequency sinks, and the pressure of the aortic system rises. After this comes a stage in which both pulse-frequency and pressure are below normal, and then a third stage, in which the pulse becomes much more frequent than normal, and the pressure in the arterial system sinks.

If a very great dose of the poison be given, the alterations in the pulse follow one another so rapidly, that the pressure begins to sink first, after the pulse-frequency has risen above the normal point, and the stage is wanting in which both pulse-frequency and pressure are below normal. Traube believed that this rising of the pressure with slowing of the heart shows that digitalis excites the musculo-motor system of the heart at the same time that it does the regulating centres. This theory he afterwards re-asserted, § with details of experiments in which, after previous cutting of the vagi, digitalis produced a marked rise in arterial pressure.

Winogradoff | asserted, in opposition to Traube, that the arterial

* Untersuchung über die Wirkung der Digitalis und der Digitalin. Archiv für physiol. Heilkunde. X. Jahrg. II. Heft.

† Experimenta de ratione inter pulsus frequentiam sanguinis pressionem lateralem et sanguinis fluentes celeritatem obtinente. Dorpat, 1858.

‡ Ueber die Veränderungen, welche die Spannung des Aorten systems unter dem Einfluss der Digitalis. erleidet. Gesammt. Beiträge, etc.

§ Zur Theorie der Digitalis Wirkung. Allgem. Medic. Central-Zeitung. Jahrg. xxx. Nov., 1861.

| Ueber die Einwirkung des Digitalin auf den Stoffwechsel und den Mittleren Blutdruck in den Arterien. Virchow's Archives, p. 457. 1861.

pressure in the dog was not materially affected by large doses of digitalin, and only by poisonous doses decreased, whilst the pulse after a previous slowing became much more rapid. This effect upon the pulse Winogradoff thinks cannot be explained by excitement of vagus centres, as such slowing of the pulse should be accompanied with sinking of the blood pressure.

In the year 1862, Dybkowsky and Pelikan * affirmed the following results obtained from experiments upon frogs:—

1. That digitalin produces a systolic arrest of the heart, after which the frog still retains his powers of motion.
2. The auricles remain in diastole.
3. An excitement of the heart nerves may precede the arrest.
4. That digitalin acts independently of the cerebro-spinal centres.
5. The vagus still has influence, as well immediately after the poisoning as during the stage of decided poisoning.
6. Whilst the most powerful current has no influence upon the contracted ventricle, galvanization of the venous sinus acts as in normal frogs upon the heart, which remains relaxed and full of blood.

Without mentioning this work Traube,† in a later memoir, states that digitalis must have an influence on the heart muscle, as when the thorax is opened, after poisoning by it, the heart is found contracted and insensible.

Marmé‡ obtained similar results to Traube. Von Bezold§ made many experiments upon rabbits, with section of the vagus and cervical sympathetic, with the conclusion that digitalis raises the tone of heart nerves in the cervical sympathetic. These heart nerves might in the rabbit be either of a checking or stimulating nature, on which account digitalis produced both early pulse-slowing and early increase in the rapidity of the pulse.

A. B. Meyer,|| who experimented on frogs, expressed the opinion that the slowing of the pulse by digitalis was owing to a secondary reflex excitement of vagi centres by the increased intracardiac pressure.

Very recently J. Milner Fothergill,¶ upon very sparse experimental evidence, has expressed the opinion that the nervous system has very little to do with the action of digitalis on the heart.

When the experimental portion of this paper was nearly finished,

* Physiologische Untersuchungen über die Wirkungen einiger Herzgifte. Zeitschrift für Wissenschaft. Zoologie. 1862.

† Ueber die Einwirkung des Kali Nitricum auf die Herzthätigkeit. Allgemeine Medicin. Central-Zeitung, July, 1864.

‡ Henle and Pfeuffer, Zeitschrift für rationelle Med. 1865.

§ Untersuchungen über die Innervation des Herzens. Leipzig, 1863.

|| Arbeiten aus dem Physiolog. Institut. zu Zurich.

¶ The Hastings Prize Essay, 1870. On Digitalis, etc.

Traube gave the results of some six experiments to the Berlin Medical Society.

He had found that in frogs whose cervical spinal cord was cut, digitalis produced very marked lowering of the pulse with great lessening of arterial pressure, and believed this to show that the slowing of the pulse was not due to the increased arterial pressure.

Ackerman, in 1870, also supported the vagus view, by finding that when atropia had been previously given, digitalis failed to slow the pulse.

After this summary of previous work, Dr. Boehm enters upon the account of his own work. He found that when 1—3 drops of a 5 per cent. solution of digitalin were dropped on the heart of a frog in 3—5 minutes, the diastole was seen to be broken into two by a rudimentary systole, so that the auricles had great difficulty in filling the ventricles, and occasionally burst themselves in the effort. The systole of the ventricles was also much more energetic than normal, the whole muscle becoming white from its rigid contraction. The imperfect, rudimentary systole reduced the number of the heart's beats to one-half, and in 5—15 minutes there was total systolic arrest of the ventricles, the auricles laboring for some time in vain to fill them, but exciting merely rhythmical waves of motion in the ventricular walls.

If very small doses of the digitalis were employed, the heart's action became after a time very irregular, portions of the ventricle remaining in a condition of systole during the whole of a general diastolic movement, or even through several movements. After a time the motions became so utterly irregular that it was impossible to distinguish the succession of the movements, and this condition continued for hours.

In a few rare cases, after moderate doses of the digitalis, the diastole was remarkably lengthened, and even diastolic arrest of the heart was made out, but this arrest was always of short duration.

An *increase* in the number of pulsations per minute was never present in any stage, and the action on the heart with a marked increase of respiratory movements were the only symptoms ever induced.

In curarized frogs the action of digitalis was as usual.

When muscarin was used Dr. Boehm found, as stated by Schneideberg, that it was possible to re-excite the heart arrested in diastole by small doses of digitalis. If *muscarin* was put early on the arrested heart, it overcame the digitalis action, but if the systolic standstill had existed for some time, muscarin was powerless.

Delphinin in most cases would restore the action of the heart arrested in systole by the digitalis; in other cases it had no influence on the symptoms produced by the latter.

The next experiments were directed to the determination of the action on the nervous system, and it was found that it made no difference if both vagi were cut, or if the cerebro-spinal nerve was destroyed. It was found, however, that the vagus became more excitable, for electrical currents too weak to show any results in the normal heart, in digitalis poisoning were sufficient to prolong the diastole and even to cause diastolic arrest, and the vagus arrest, which normally should not continue more than five seconds, in the digitalized heart stretched over from 30—120 seconds.

As the result of these experiments, Dr. Boehm concludes that in the frog:—

1. Digitalin produces a condition of excitement in the controlling centres in the heart, and hence the slowing of the pulse and increased power of the vagus.

2. It has a peculiar specific influence on the heart's muscle, whose contractions are strengthened in the first stage, become irregular in the second, and in the third a condition of peculiar rigidity is induced.

The investigation was next directed to determining whether the small arteries are affected by digitalis. Dr. Boehm states that he has very often examined the small arteries of the mesentery of frogs, studying for hours the action of digitalis upon them, but always with negative results. He also connected a manometer with the aorta of the frog, and found that the blood pressure was increased $\frac{1}{4}$ — $\frac{1}{2}$ by small doses of digitalis, but if the dose was repeated the pressure sank.

This experiment was repeated in the manner of Blasius (modified from Fick), in which the isolated heart is made to pump serum through a glass tube. The method is elaborately explained by Dr. Boehm, but we have only space for the result, which was a constant one. It was found that the heart's work, immediately after the application of the digitalis, underwent a greater or less increase. If the amount of the drug were small this increase was very persistent. With larger doses the first increase soon gave way to diminished power. Finally, the heart stood still with every drop of serum squeezed out of its ventricles. The individual beat of the heart was greatly increased in power, in some instances very nearly doubled. The loss of power in the second stage of action appeared to be due partly to the great slowing of the heart, partly to the incompleteness of the diastole and the consequent imperfect filling of the ventricles.

Dr. Boehm, after detailing the experiments from which the above results were obtained, enters upon an account of his experiments upon dogs, rabbits, and cats. He found, in agreement with Traube and opposition to Winogradoff, that after moderate doses of (10,001—0,005

grms.) digitalin there was regularly a decided rising of ($\frac{1}{4}$ — $\frac{1}{2}$) the arterial pressure. If the dose were not repeated, this continued to the close, but if it were repeated, or larger doses were given at first, there was decided falling of the arterial pressure. The slowing of the pulse was always unmistakable. The single heart-beat was in strict agreement with the double beat of the frog's heart, the pulse being very markedly dirotic, so that the diastole was evidently interrupted by an imperfect systolic effort. Some time after the poisoning, the cardiac tracing showed great irregularity, and at times there would be 2 or 3 systoles before a well-pronounced perfect diastole would be brought about. This condition Dr. Boehm believes similar to what is sometimes spoken of in digitalis poisoning as the double or triple pulse, and to be dependent upon the irritability of the ventricle being so great that it is thrown into systolic contraction when it is half full of blood, so that there must be a partial exhaustion of the heart before a full diastole can occur.

In other instances the course of the cardiac tracing indicated that when the heart had half sunk back into the diastolic state, it remained for some time in this condition of semi-contraction before passing into full diastole. In other cases, the heart appeared to stand still for some time, and the tracing showed that this was during systole. Such cases no doubt correspond to the so-called interrupted (*aussetzenden*) pulse of digitalis poisoning. Whilst in the beginning of the action of the drug the pulse curve is not very different from normal, afterwards it becomes very peculiar. The ascending line is no longer immediately succeeded by the descending, but by a horizontal trace, so as to give a ridge-like appearance. There appears to be no doubt but that these phenomena are due to anomalies in cardiac muscular contractions, and it seems very difficult to detect in them any influence of the cardiac nerve centres.

As to the relation of the digitalis to the controlling nerve centres, Dr. Boehm believes that Traube is right.

Dr. Boehm, in experiments upon rabbits, found, as Traube had stated, that after section of the cervical spinal cord, there was no rise in the arterial pressure upon the injection of digitalis.

Bezold has published * an experiment in which, after the rise of the pressure under the influence of digitalis, section of the spinal cord was followed by immediate sinking of it below normal.

Dr. Boehm thinks that, although these results show that digitalis has not the power to overcome the sinking of the pulse consequent upon separating the arterioles from the vaso-motor centre, they do not prove that the drug has any influence upon the lumen of the vessels in the

* Untersuchungen über die Innervation des Herzens. II. Abth., p. 205.

normal state. Why they do not, does not, however, appear to be very clearly made out or stated by Dr. Boehm.

MICROSCOPIC STUDIES OF THE INFLUENCE OF DIGITALIS, VERATRIN, AND ERGOT ON THE CIRCULATION.

- C. BOLDT has published an inaugural dissertation with the above title, in which he gives the account of experiments performed on frogs by Cohnheim's method. Curarized frogs had their flanks opened, and the intestine and mesentery having been drawn out, the animal was laid upon his back, and the circulation studied. Hypodermic injections of digitalin, veratrin, and ergot were employed. Twelve experiments with digitalin led to the result that it, in the first instance, produces a strong contraction of the peripheral vessels, which is followed by a marked slowing of the pulse, which is, if the dose be large enough, followed by laming of the heart, as shown by smallness and irregularity and rapidity of the pulse, with a vibrating or undulating blood stream; and finally, after a short increase in rapidity, the pulse falls with great suddenness, and then, with general vaso-motor paralysis, the animal dies.

Eleven experiments with *veratrin* showed that it directly paralyzes heart and arterial muscles, there being an immediate lowering of the pulse-frequency, the size and force of its wave, and an increase in the lumen of the vessels.

Twelve experiments with *ergotin* resulted in a constant lowering of the pulse rapidity, by both large and small doses, accompanied by peristaltic or wave-like contractions and expansions of the artery.—*Schmidt's Jahrbucher*, No. 1, March 12, 1872.

ON THE RELATIVE POWER OF VARIOUS SUBSTANCES IN PREVENTING PUTREFACTION, AND THE DEVELOPMENT OF PROTOPLASMIC AND FUNGUS LIFE.

BY DR. F. GRACE CALVERT.

DR. CALVERT read a paper with the above title before the Royal Society, an abstract of which is in the *Chemical News* of March 28, from which the following is condensed. Dr. Calvert used small test-tubes, previously cleansed and heated, in each of which were put one part of white of egg, four parts of distilled water, and 1-1000th part of the drug. The tubes were kept at a uniform temperature of 12.5° C.

to 15.5° C., and examined daily, with a power of 800 diameters, for 39 days, and occasionally for 80 days. The results were as follows:—

	Days required for development.	
	Fungi.	Vibrios.
1. STANDARD SOLUTION	18	13
2. ACIDS.		
Sulphurous acid	21	11
Sulphuric acid.....	9	9
Nitric acid	10	10
Arsenious acid.....	18	22
Acetic acid	9	30
Prussic acid.....	None.	9
3. ALKALIES.		
Caustic soda.....	18	24
Caustic potash.....	16	26
Caustic ammonia.....	20	24
Caustic lime.....	None.	18
4. CHLORINE COMPOUNDS.		
Solution of chlorine	22	7
Chloride of sodium	19	14
Chloride of calcium	18	7
Chloride of aluminium	21	10
Chloride of zinc	53	None.
Bichloride of mercury.....	81	None.
Chloride of lime.....	16	9
Chlorate of potash.....	19	17
5. SULPHUR COMPOUNDS.		
Sulphate of lime.....	19	9
Protosulphate of iron.....	15	7
Bisulphite of lime.....	18	11
Hyposulphite of soda.....	18	11
6. PHOSPHATES.		
Phosphate of soda	17	18
Phosphate of lime.....	22	7
7. PERMANGANATE OF POTASH	22	9
8. TAR SERIES.		
Carbolic acid.....	None.	None.
Cresylic acid.....	None.	None.
9. SULPHO-CARBOLATES.		
Sulpho-carbolate of potash.....	17	18
Sulpho-carbolate of soda.....	19	18
Sulpho-carbolate of zinc.....	17	None.
10.		
Sulphate of quinine	None.	25
Picric acid.....	19	17
Pepper	None.	8
Turpentine.....	42	14
Charcoal	21	9

These substances might be arranged under four heads:—

First. Those which prevent the development of all life, including only carbolic and cresylic acid.

Second. Those which prevent the development of vibrional life, but not of fungal life, including only bichloride of mercury and chloride of zinc.

Third. Those which prevent the development of fungi, but not of vibrios, including lime, pepper, turpentine, sulphate of quinine, and prussic acid.

Fourth. Those which do not prevent the development of either forms of life, including the remaining 25 substances.

NITRITE OF AMYL IN EPILEPSY.

DR. S. WEIR MITCHELL has a short paper on this subject in the Philadelphia *Medical Times* of April 15. He reports a case of most severe epilepsy, following sexual excesses, in which the convulsion was always succeeded by spasm of the arm. After the failure of all other remedies, Dr. Mitchell says :—

“As a last resort, I gave him in a very small phial three or four drops of nitrite of amyl, and showed him how to inhale it by putting the open phial up one nostril while with one finger he closed the other, and then made a few full inspirations. The first attempt failed, because, as he said, the spasm of the left limb made him nervous. On the second occasion he began to breathe it the instant the fingers twitched,—having pulled the cork of the phial with his teeth. In a few moments he felt his face flush, the carotids beat violently, his head felt full, and, the spasm ceasing, the attack at once, and for the first time in his experience, was cut short. Four days later he thus cut short another attack; and the experiment has since succeeded in eleven fits, and failed, from too late use of the nitrite, in two. Moreover, the attacks have lessened in frequency, and now come on only once in ten to twenty days.”

Dr. Mitchell remarks as follows :—

In a second instance of epilepsy, with aura proceeding from the right hand, the nitrite of amyl has been successfully used in two attacks; but commonly the cerebral phenomena in this, as in most cases, follow too soon to be of value,—or, rather, too soon to allow of time for the nitrite to affect the intracranial circulation.

This must, unhappily, be the case in most epilepsies; but in all which have an aura or local spasm distant enough in time from the cerebral symptoms, it may be of value, and ought certainly to be employed.

In another class of rare cases it may also prove of service. There are certain epilepsies in which the spasms last for hours, one fit following another. In these I commonly employ, with success, injections under the skin of bromide of lithium, using thirty or forty grains in three or four localities; but I have twice checked these attacks at once by inhalations of the nitrite of amyl. In one of

them there was a second fit, but no more,—which was unusual. In the other, which lasts always several hours, I used the nitrite at the close of an hour, in the third convulsion. Relaxation instantly occurred; the fit passed off, and no other followed. Ether has been frequently employed in this case, but it merely mitigates the attack, and its use has to be kept up for hours.

NOTE RELATIVE TO THE BROMIDE OF CALCIUM.

BY WILLIAM A. HAMMOND, M.D.

BROMIDE of calcium is a white crystalline substance, very soluble in water, and readily decomposing on exposure to the atmosphere for a few minutes. The aqueous solution is at first colorless, but it soon becomes tawny from a portion of the bromide being set free. Its taste is similar to that of the bromide of potassium, though somewhat more pungent and disagreeable.

The formula of bromide of calcium is BrCa , and its combining equivalent is 98 (Br. 78, Ca. 20=98); 100 grains, therefore, contain about 79.5 grains of bromide.

Desiring to test the therapeutical value of this compound, I desired Dr. Neergaard to procure it. During the last few months I have used it in a number of cases in which the bromides were indicated, and have become satisfied of its great efficiency as a medical agent.

The dose is from fifteen to thirty grains or more for an adult. It is especially useful in those cases in which speedy action is desirable, as, owing to its instability, the bromine is readily set free, and its peculiar action on the organism obtained more promptly than when either of the other bromides is administered. Chief among these effects is its hypnotic influence, and hence the bromide of calcium is particularly beneficial in cases of delirium tremens, or in the insomnia resulting from intense mental labor or excitement.

Thus, I gave a gentleman who, owing to business anxieties, had not slept for several nights, and who was in a state of great excitement, a single dose of thirty grains. He soon fell into a sound sleep, which lasted for seven hours. The next night, as he was wakeful, I gave him a like dose of bromide of potassium, but it was without effect, and he remained awake the whole night. The subsequent night he was as indisposed to sleep as he ever had been, but a dose of thirty grains of bromide of calcium gave him eight hours sound sleep, and he awoke refreshed and with all unpleasant cerebral symptoms—pain, vertigo, and confusion of ideas—entirely gone.

In a number of other instances a single dose has sufficed to induce sleep, a result which very rarely follows the administration of one dose of any of the other bromides.

In those exhausted conditions of the nervous system attended with great irritability, such as are frequently met with in hysterical women, and which are indicated by headache, vertigo, insomnia, and a mental condition of extreme excitement, bromide of calcium has proved in my hands of decided service. Combined with the syrup of the lactophosphate of lime, it scarcely leaves anything to be desired. An eligible formula is—℞ Calcii bromidi, ʒj.; syrup. lact. phos. calc., ʒiv. M. ft. sol. Dose, a teaspoonful three times a day in a little water.

In epilepsy I have thus far seen no reason for preferring it to the bromide of potassium or sodium, except in those cases in which the paroxysms are very frequent, or in cases occurring in very young infants; of these latter, several, which had previously resisted the bromide of potassium, have yielded to the bromide of calcium. It does not appear to cause acne to anything like the extent of the bromide of potassium or of sodium.

My object in writing this note is simply to call attention to a remedy which promises well.—*New York Medical Journal*, December, 1871.

ERGOT.

In the *Dublin Med. Journal* for April, 1872, is a paper on Ergot by Dr. Jno. Denham, who states that he has experimented clinically with ergot to a considerable extent, and that in leucorrhœa it occasionally appears to be of service—that in amenorrhœa it never does good. In many cases of menorrhagia it has been very serviceable, and when polypi are present sometimes promotes their expulsion. Whenever, however, the hemorrhage is due to fibroids, the ergot has been of no service. His views of its action on pregnancy may be summed as follows:—

When given, even in large doses, before the full period, it does not produce abortion, but when abortion has fairly commenced it hastens it. It has no action on the *fœtus in utero*. When given in the second stage it hastens it, but at great mechanical risk to the child. When given near the close of the second stage of labor, it acts most favorably in the prevention of *post-partum hemorrhage*. In post-partum hemorrhage, either before or after the expulsion of the placenta, it is of no value. In the discussion which followed the reading of this paper before the Dublin Obstetrical Society, several gentlemen differed from Dr. Denham, bearing witness to the value of the drug in *post-partum hemorrhage*.

DIABETES.

DR. J. T. SHEARER states (*Medical and Surgical Reporter*) that he has succeeded in curing five cases of confirmed diabetes by a method of treatment which the following, taken verbatim from his paper, will serve to illustrate:—

Owing to the great debility of the patient, I commenced the new treatment by prescribing as follows:—

℞ Tannic acid grs. v.

Opium pulv. gr. ss. M.

Sig.—To be taken at 9 A.M., 3 P.M., and bedtime, and tinct. ergot 3 j., to be taken before each meal in water.

Also:—

℞ Veratriæ. 3 j.

Ungu. cetacei 3 j. M.

Sig.—The size of a cherry, to be well rubbed along the spine every morning and evening.

I directed him to abstain as much as possible from animal food, confine himself to a vegetable diet, and to procure lager beer or ale to drink instead of water; and if either became nauseous to him, to alternate with tea, or whiskey and water.

I increased the acid grs. v. every eight or ten days during the three following months, until I considered a cure permanently effected; but the opium and ergot were not increased every time.

Within six weeks from the commencement of my treatment this patient's abdomen had become sensibly diminished; the hard band or cord which had passed over it had disappeared, and it began to have a natural appearance and feel; his weight had increased during that time quite rapidly; being weighed it was found to be nearly 105 pounds, an increase of nearly 15 pounds in less than six weeks, while the liquid drunk and urine voided had been reduced from two and one-half gallons in thirteen hours to less than one gallon in the same time.

At this time I was giving tannic acid in xxv. gr. doses, with opium gr. j. and ergot 3 iij.

If this was "tom tom" treatment it was very effective, certainly.

Before the first of December I commenced giving the medicine four times daily, and, excepting the opium, in increased quantity, at intervals of ten days. By the first week in January, 1872, the patient had entirely recovered; he was able to work without experiencing great or unusual fatigue, and his weight had increased to 125 pounds.

I then commenced diminishing the quantity of medicine and number of doses at short intervals till the beginning of the present month (February), when I ceased administering it entirely; every trace of the

disease having disappeared, and his weight having increased to 130 pounds ; that being a greater weight, he informed me, than he had ever reached prior to that time.

ON THE USE OF PHOSPHORUS IN CERTAIN DISEASES OF THE SKIN.

DR. H. EAMES has a paper with the above caption in the *Dublin Journal of Medical Science* for Jan. 1, 1872. He uses the drug in the form of solution in olive oil, ten grains to the ounce. The dose is five to ten drops three times a day, after meals, and is best given in gelatin capsule. Dr. Eames details a very severe and obstinate case of acne, cured ; three cases of lupus, in which all other known forms of treatment had been proved powerless, cured ; as well as several cases of scrofuloderma and of psoriasis in which speedy cures were effected. In the latter disease he states that, after the failure of arsenic, he has habitually found phosphorus very efficacious.

He says—I have found that phosphorus produces a coated state of the tongue, not unlike the silvery tongue which follows the prolonged use of arsenic. Loss of appetite, mental depression, and bodily weakness are also induced much earlier in some cases than others, but are to be watched for in all cases in which the drug is given. On the earlier appearance of dyspeptic symptoms I now discontinue its use and administer some of the mineral acids.

Many patients have mentioned that, some two or three minutes after taking the medicine, a pleasant sensation of warmth is felt through the entire body. I have not ascertained that any aphrodisiac effect is induced, although I have frequently inquired for it. A slight diaphoresis is observed occasionally. Diarrhoea was not induced in any of my cases. The amount of urine in some was slightly increased. Analysis detected nothing abnormal.

Dr. Eames further says that he has found phosphorus of very great service in eczema of the scalp, with enlargement of the glands, stating that he has seen in many cases a copious eczematous eruption behind the ears and on the head, combined with greatly enlarged *glandulae concatenatae*, disappear in a few weeks after this treatment had been adopted, the glands being also quickly restored to their normal size.

XYLOL.

THIS hydrocarbon, it seems, has been used in Berlin in the treatment of small-pox with good results.

The *Berlin Klinische Wochenschrift* states that Dr. Zuelzer, of the

Charité Hospital, had administered xylol in cases of small-pox, with the most complete success. It is given in doses of from 3 to 5 drops for children, 10 to 15 drops for adults, every hour to every three hours: as much as a teaspoonful at a time has been taken. The most convenient form of taking it is in capsules containing 3, 5, 8, and 12 drops each.

The theory has been broached that xylol is taken up by the blood, and acts as a disinfectant. Absolute purity of the xylol is necessary, as toluol and other analogous compounds do not possess this peculiar action, and it seems there are some practical difficulties in obtaining xylol absolutely pure.

Xylol, or xylene, C_8H_{10} , was first separated from coal naphtha by Dr. Hugo Müller; it is obtained by fractional distillation until a distillate is obtained of about $140^{\circ} C.$ boiling-point; this is mixed with sulphuric acid, which dissolves xylol, forming xylol sulphuric acid; this acid is decomposed by dry distillation, and the xylol thus obtained is further purified. Pure xylol is colorless, it has a faint odor, somewhat like benzol, but different; boiling-point $139^{\circ} C.$, sp. gr. 806.—*Med. Press and Circular*, Feb. 7, 1872.

LOCAL ACTION OF HYDRATE OF CHLORAL.

A WRITER in the *Scientific American* states that chloral applied locally is an exceedingly active counter-irritant, producing, if used carelessly, very obstinate ulcerations. He says: "When applied, the burning is precisely like that produced by a cataplasm of strong mustard; but, at the same time, a sedative action is perceived, which somewhat neutralizes the smarting, while it does not prevent an excessive irritation of the skin. It does not blister, but the part the chloral has been applied to becomes exceedingly inflamed, and more or less swollen; and, according to the length of time of application, shows a merely reddened skin, or a suppuration of several weeks' duration.

"I give you my mode of application: Take a piece of fresh adhesive plaster, of the size wanted, and crush fine, on its surface, with an ivory spatula, enough of the crystals of the chloral to powder the piece of adhesive plaster quite evenly; use the edge of the spatula to take off the chloral where it is more than a mere dust in thickness, but distribute evenly, leaving one third of an inch margin for adhesion: heat the back of the plaster for an instant only, and apply. Leave it on about half an hour as a rubefacient, six hours as an irritant. To produce suppuration, put the chloral on the plaster in large quantities, and leave on from twenty-four to thirty-six hours; on its with-

drawal, apply a stimulating salve, and afterwards heal with cerate. For an escharotic effect, apply the chloral, thickly spread, and, after twelve hours, repeat the application, if necessary.

ON THE USE OF THE LACTO-PHOSPHATE OF LIME AS AN ANALEPTIC MEDICINE IN ADYNAMIC FEVERS IN CONVALESCENCE.

UNDER the above caption Dr. R. Blackie, of Paris, has a paper of considerable therapeutical interest in the *London Practitioner* of February, 1872. He claims for the preparation that it is almost a physiological necessity, and states that the vital activity of animals and their temperature are proportionate to the quantity of lime phosphate they contain; so that from the bird to the man, and from man to the mollusk, the quantity of the salt follows a descending course. He deprived a pigeon of almost all phosphate of lime in its food, and it soon lost all its liveliness, its appetite, a notable portion of its flesh and weight, and excreted more phosphate than it took in. The addition of the phosphate to its food was very shortly followed by return to health. He also asserts that certainly in vegetables and probably in animals the phosphate of lime is really associated with the most active nitrogenous living matter. He commends it highly in youths whose development had been stopped without any apparent adequate reason, stating that under its use growth and health rapidly reappeared. Also in the general atony that follows protracted fevers. Likewise in marasmus in children, when at dentition or puberty food is disgusting, general atony present, and diarrhoea and constipation show the involvement of digestion. He believes it to be very useful in the adynamic stage of some pneumonias, and even in the acute stage of typhoid fever, stating that he found it very efficient in the treatment of the severe epidemic of adynamic enteric fever during the siege of Paris.

ON THE USE OF NITRATE OF SILVER IN CERTAIN LOCAL INFLAMMATIONS.

DR. GEO. CROWELL commends most highly the application of nitrate of silver in local inflammation, such as boils, carbuncles, testitis. In the latter disease he applies it in the following manner:—The scrotum is made to present a tolerably smooth surface of skin over the swollen testicle, which surface is then wetted by means of a piece of lint previously dipped in water, and the solid nitrate of silver is then

carefully and equally applied over the whole surface, suspensory bandage and rest being enjoined. In from two to six hours the pain has disappeared, and after this a gradual diminution of the swelling occurs. In boils and similar phlegmons he uses the solid stick or the strong solution (20 grs. to drachm), as originally advised by Mr. Jno. Higginbottom.—*London Practitioner*, Feb., 1872.

TREATMENT OF ALVEOLAR HEMORRHAGE.

In the *Dental Cosmos* for February, 1872, is an article upon this subject, by the editor, Jas. W. White. He enjoins the various constitutional and hygienic measures which are to be used in the treatment of all hemorrhages, and says of the local measures:—

Various methods have been suggested for the employment of pressure to close the mouths of the bleeding vessels: with teeth having but one root, the application of a styptic and the reinsertion of the tooth; the filling of the socket, after the employment of an astringent, with plaster-of-Paris mixed with water, or in powder, and allowing it to absorb moisture enough to cause it to set; the application of a small pellet, containing a styptic in powder or solution, and subsequently filling the space with cotton, saturated with sandarac varnish. Compresses of wood or cork, held in place by the opposing teeth, assisted by bandaging the jaw, have also been employed successfully. In cases where the hemorrhage is capillary, a saddle, made of cork, with a V-shaped slot cut in it, so that it will contract or clamp the margins of the socket, has been found very efficient. The most efficient saddle for the purpose is one made of gutta-percha, formed while in a plastic state to fit the space,—subsequently removed and contracted somewhat by pressure, then cooled and sprung over the parts. This method is easy of application, and, especially where there are adjoining teeth, the most complete of any plan yet suggested for making uniform pressure.

Of the various vegetable astringents, tannin is, perhaps, the most efficient, and has the advantage of forming a clot which is insoluble in any of the constituents of the blood. The best method of applying it is in powder, on small pieces of lint, packed, one after the other, into the socket. An admirable application is styptic colloid. Of the mineral astringents, alum, either in powder or saturate solution, will control most cases of venous or capillary hemorrhage. In severe cases, nitric acid seems to be less objectionable than the preparations of iron or the lunar caustic, because less liable to cause slough and the secondary hemorrhage which follows. Tannin, or alum, with pressure by

the gutta-percha saddle, will almost surely check any alveolar hemorrhage except that caused by an open artery, and will frequently control that. These failing, the actual cautery promises the promptest relief.

INHALATIONS OF CALOMEL.

At the meeting of the Medical Society of London, Mr. Henry Lee said that he was the first to introduce calomel baths to the notice of the profession, and before doing so had labored to find out the cause of failure of the cinnabar and gray oxide of mercury. The cinnabar is decomposed by heat, and gives off sulphurous acid, which irritates the lungs; the gray oxide is decomposed, and, absorbing oxygen, becomes the binoxide, and acts more powerfully. These remedies acted sometimes with small effect, sometimes with great effect. Calomel, when used with water, as he recommended, is, he thought, perfect; the skin is acted upon, and the lungs are not irritated. The caution given to use water with the bath has been neglected in some quarters. During the fumigation of calomel, hydrochloric acid is given off, which is very irritating to the lungs, but no bad results follow it if water is used as well. In the fumigation of calomel dry, without the presence of water, as in fumigation from a teapot, hydrochloric acid gets into the lungs, and causes much harm.

CASE I.—A young woman in good health, and well nourished, was suffering from a syphilitic ulcer of the throat. Twenty grains of calomel were volatilized in a teapot, and inhaled; the skin became gold and livid, the lips blue and the pulse small. On a *post-mortem*, for the woman died, the internal organs were healthy, but the lungs were emphysematous, and there was effusion into them. The symptoms appeared suddenly, and the fumigation, no doubt, caused the death; if a little vapor of water had been present, no harm would have happened.

CASE II.—A man inhaled gr. xxx. of calomel from a teapot for four nights, for the cure of a hoarseness which had lasted two years, and which had resisted a great variety of treatment. The hoarseness was cured without salivation, and the man has suffered ever since from a cough, and pain in the chest. The lungs are not diseased, and no tubercle is present. In America the bath is used a great deal, but they make a sweating bath of it, which is an error, as the patient is debilitated, and the calomel washed off.

The President asked Mr. Lee if he had met with any untoward results, after his treatment with the bath. What recommendation did he give to those about to use the bath?

Mr. Lee had not seen bad results, except from the pre-existing disease—old cases of mercurialization, or disease of the bones. He does not salivate, but gets a slight tenderness of the gums. He uses an apparatus of tin, with a tray for the calomel, and a gutter for

water, a spirit lamp to burn an ounce of spirit, calomel 3 ss. A stool, a chair, and a cloak. The calomel is sublimed and deposited on the skin. A little of the vapor is to be inhaled from time to time; the patient is to sleep in the cloak. In four or five nights the gums are affected. In the case of one patient, two successive baths produced tender gums. Substances likely to induce diarrhœa are to be avoided. — *The Doctor*, March 1, 1872.

OXYTOXIC POWERS OF QUININE.

It having been recently claimed for quinine that it has power to cause uterine contractions, Dr. R. W. Erwin details in *The St. Louis Medical and Surgical Journal*, of March, 1872, what may almost be considered a test case. A woman in the fifth month of pregnancy was seized with violent irregular intermittent, in which abortion was very strongly threatened, by pains, dilatations of the os and flow. Under the pronounced use of morphia, the symptoms were kept in check until the irregular paroxysmal disturbances developed into a distinct intermittent. Quinia was then administered, until profuse cinchonization was induced. The paroxysms, by this treatment, were entirely cured, and the threatening abortion prevented, the patient going to the full term.

Dr. Jas. C. Harris very forcibly (*American Practitioner*, April, 1872) combats the asserted power of quinine of causing contractions of the gravid uterus, stating that he has given it very freely in many cases of threatened abortion from ague, and always thereby at once checked the malarial disease and the commencing abortion.

OZONE: ITS CHEMICAL, PHYSIOLOGICAL, AND CLINICAL CHARACTERS.

In a meeting of the *Gesellschaft der Aerzte* of Vienna, on the 26th of January, Dr. Dittel being in the chair, Dr. J. Schreiber, physician of the Sanatorium of Aussee, gave a discourse upon ozone. The accidental discovery of ozone we owe to Van Marum, who, in 1785, passed the electric spark through oxygen, and then perceived that the gas acquired a peculiar odor. He, however, did not go further. Professor Schönbein, of Basle, first of all made himself master of the situation, and brought forward a number of interesting facts relative to ozone. He found that a peculiar phosphorus-like smell took place when water was resolved into its elements by the galvanic battery. He named the

substance which caused this smell ozone. The smell of ozone is only set free at the positive pole; at the negative pole there is no trace of it. The easiest method of exhibiting ozone is to place phosphorus in a flask filled with atmospheric air, and partly covered with water, the flask being shaken so that new portions of the phosphorus always come in contact with the air. Ozone is a gas which is not taken up by water. Whilst the common oxygen molecule consists of two atoms, the active ozone molecule contains three atoms. Ozone oxidizes bodies also at low temperatures; raising them at once to the highest point of oxidation. From this circumstance it is like chlorine in its bleaching and disinfecting process; it oxidizes silver, but neither gold nor platinum. It bleaches litmus paper and indigo solutions. It is absorbed by straw-humus, and organic matter in general.

After the author of the paper had mentioned the remaining chemical properties of ozone, he adverted to the theory of Schönbein concerning ozone and antozone, and the volumetric relations of ozone, and then described the way in which ozone acted with blood. Blood, defibrinated as well as undefibrinated, and hæmo-globin, have the property of setting free ozone which has been taken up by oil of turpentine. Blood globules act in the same way upon the peroxide of hydrogen. This substance is resolved by means of the blood globules into water and oxygen, and the nascent oxygen gives the well-known reaction, namely, that of making blue strips of guaiacum paper. Hæmo-globin loses this power when it is raised to boiling heat or is mingled with alcohol. According to the investigations of Alex. Schmidt, there is no doubt but that the oxygen which is taken by respiration and food into the organism of animals is ozonized by the blood corpuscles; yet, as all the ozone, immediately after being taken in, is required for purposes of oxidation, we cannot discover either free or combined ozone any longer in the blood. It seems near the truth that the ozone is destroyed when water is present, forming with it peroxide of hydrogen; but this also is separated into water and oxygen, which latter, in its nascent stage, is used for purposes of oxidation. For this reason no peroxide of hydrogen has as yet been noticed in the blood. According to this account there takes place in the organism of animals a continuous formation and destruction of ozone and peroxide of hydrogen. A constant work of oxidation goes on in all vascular parts of the animal economy, keeping up the chemistry of life. With the assistance of ozone the blood corpuscles are dissolved and changed into other products.

The peroxide of hydrogen contained in the blood is thus quickly decomposed into water and oxygen; but the latter is not taken up as such by the blood, since we know that even a few bubbles of oxygen,

when taken up by the blood, have an injurious effect. The nascent oxygen is employed at once for fresh purposes of oxidation. Schmidt explains the fluidity of the blood by observing that the products of the destruction of the hæmo-globin immediately lose their plastic property through the action of the oxygen, which is in a nascent state. When the blood is removed from the body its chemical nature undergoes alteration, and the fibrino-plastic property appears. In this way, too, the fluidity of the other fluids in the body, such as lymph, chyle, etc., may be comprehended.

The remark of Schönbein, that the chief function of the blood corpuscles is the chemical excitement of the oxygen of the respired air, has found, by recent experiments, complete confirmation. With respect to the measurement of atmospheric ozone, it may be remarked that ozone is an almost constant constituent of the air. The great natural fountain-head of this substance must be sought for in the electric discharges of the clouds; but there are several processes by which ozone may be obtained.

Recently, Thau, of Pesth, has discovered a new source of ozone. He, by accident, became aware that ozone is found in the hydrogen flame of the Bunsen light, and in the flame of spirits of wine. Thau is accordingly of opinion that this substance is produced in various processes of burning. When coal burns, however, no ozone is produced, because in this case a molecule C absorbs the whole molecule O₃. Besides this, according to Montegazza, several aromatic plants and flowers possess the property of making evident ozone, which he has found from a number of experiments. With respect to the ozonometer, the author of the paper observes that especially iodide of potassium, which ozone destroys, is the substance whose reaction is made use of. Two hundred parts of water, with ten parts of starch and one part of iodide of potassium, are used; and into this strips of paper are dipped. Such strips are turned blue in air containing ozone, because the iodide is destroyed, iodine being set free. This method, however, of observing the presence of ozone leaves much to be desired. From the accurate observations of Professor Boehm, it results that the atmosphere contains more ozone by night than it does by day, and more when western winds blow than when eastern winds prevail. There is more of it on the side of the house where the wind blows than on the other; more in country than in town. With respect, too, to the season, there are many differences. There is more ozone in the air from February to June; less in the months from July to January.

As to the therapeutical value of ozone, as yet there is little to be found in medical literature clear or well-marked. Dr. Lender relates a case wherein a woman who, after obstinate intermittent fever, had

symptoms resembling cholera and was in grave danger, was saved by inhalation of ozonized air. Again, in cases of asphyxia from carbonic oxide gas or common gas, the good effect of ozone has been more than once proved.

The reader of the paper closed his interesting communication by the following conclusions:—1. Ozone is nothing else but oxygen condensed to two-thirds of its bulk, in which state it possesses energetic oxidizing properties. 2. The whole of the tissue-changes in animals may be accounted for by the transformation of the inhaled oxygen into ozone, and the effect of the latter on the tissues. 3. Ozone composes a constant part of atmospheric air. 4. The use of ozone as a therapeutic agent deserves the greatest attention from physicians, and is destined to play a great part in the practice of medicine (*a*).

The reading of the paper was illustrated by demonstrations and physical experiments.—*The Doctor*, March 1, 1872.

THE TREATMENT OF FEVER.

BY DR. C. MURCHISON.

1. To remove, when possible, the cause on which the fever depends.
2. To promote elimination, not merely of any morbid poison, but of the products of exaggerated metamorphosis in the blood and tissues.
3. To reduce the temperature and the frequency of the action of the heart.
4. To maintain the nutrition of the tissues, and stimulate the action of the heart, by appropriate food and stimulants, taking care, at the same time, not to excite congestion, or increase the work of the already overtasked glandular organs.
5. To relieve dangerous and distressing symptoms.
6. To obviate and counteract secondary complications.

1. Unfortunately, it is not often that we have it in our power to remove the cause of pyrexia; but the object is one always to be kept in view, and sometimes the main efforts of our treatment must be directed to secure it; as, for example, pyrexia dependent upon pent-up pus, an obstructed bowel, or gouty, syphilitic, or periosteal inflammation.

2. The elimination of any morbid poison, as well as of the products of exaggerated metamorphosis, will often be promoted by the judicious employment of diaphoretics, diuretics, purgatives, and emetics. The old practice of commencing the treatment of pyrexia by giving a purgative, to unload the portal circulation and promote the action of the liver, is undoubtedly a good one, and is particularly advisable in persons of robust habit, or who live too well. In mild cases of pyrexia, the

only treatment necessary consists in the avoidance of any chill, and in the administration of a mild aperient, followed by frequent doses of diuretics and diaphoretics, such as the citrate of potash, or the liquor ammoniæ acetatis with spirit of nitrous ether. Elimination will also be promoted by a plentiful supply of fresh air, which will favor the escape of carbonic acid from the lungs, and by the free use of diluents, which will help to wash away through the kidneys the products of tissue-waste. In all grave cases of fever you will remember the importance of maintaining the action of the kidneys, and of keeping a good watch on the state of the urine; noting carefully not so much its color and the presence or absence of lithates (both of which characters will depend much on the quantity), but the quantity and the presence or absence of albumen. When the quantity becomes notably diminished, or albumen appears, advantage will often be derived from hot poultices to the loins, aperients, diaphoretics, diluents, and diuretics. But while you promote elimination, you must take care that the means for this end do not weaken too much the action of the heart; and you must remember that, in some fevers, the natural processes of elimination are excessive, and conduce to dangerous exhaustion and death.

3. For reducing the intensity of the pyrexia, different measures have been proposed.

Blood-letting was at one time universally resorted to for this object, but in this country it is now entirely discarded, because it was found to increase one of the great dangers in pyrexia, viz., failure of the heart's action. There are few accurate observations on the effects of blood-letting on the temperature of pyrexia; but we know that, when a copious bleeding of the nose or the bowel takes place in enteric fever, although the temperature may fall below the normal standard, it speedily regains its former height, or rises above it.

The external use of cold water is one of the most certain means of reducing temperature in pyrexia, and in certain cases is attended with good results. The attention which this practice is now attracting will justify the following remarks: In the seventeenth century the brothers Hahn, of Leipzig, treated fevers by the external use of cold water, but their observations were soon forgotten. Toward the end of last century (1787) cold affusion was proposed by Dr. Currie, of Liverpool, both for arresting and mitigating fever. The patient was seated naked in an empty tub or bath, and several buckets of water, of a temperature of 50 or 60 deg. Fahrenheit, were poured from a height of from 2 to 3 feet or more over the head and chest. He was then hastily dried and restored to bed, and, in most cases, the operation was repeated once or twice daily. It was stated that in many cases, if resorted to during the first three days, this treatment arrested the disease; while in

others it reduced the pulse and temperature, relieved many of the distressing symptoms, and particularly the headache, restlessness, and delirium, and conducted the disease to a safe and speedy issue. The affusions were employed at any stage of the fever; but the effects were always most salutary at an early stage. They were said to be contraindicated when the temperature of the skin, ascertained by the thermometer, was not much above the normal standard, or when, notwithstanding an elevation of temperature, the patient complained of chilliness, or suffered from severe diarrhoea or profuse sweating.

The wonderful results obtained by Currie were confirmed by numerous observers in different parts of the world, whose testimony is recorded in the edition of his work published in 1804.* But in the British epidemic fever of 1817-19, the practice was followed by many with great perseverance, and the general result, according to Sir Robert Christison, was that in very few cases, if any, was the disease arrested by it; that although an abatement of febrile heat and restlessness occurred almost invariably, it was of short duration, and not to be made permanent by any frequency of repetition; that as much good eventually was attained by frequent cold or tepid sponging, together with cold applied to the head; and that often the cold affusion occasioned for a time after each application an intense feeling of pressure and weighty feeling in the brain, which could not be regarded without some uneasiness.† These statements, backed by professional and popular prejudice, account perhaps for the subsequent neglect of cold-water treatment of fevers. But the observations made of late years by Brand, of Stettin, Jurgensen, of Leipzig, Liebermeister, of Basle, Ziemssen, of Erlangen, and H. Weber and Wilson, of London, show that although the practice may not shorten the fever, and is often inapplicable, yet under certain circumstances it is useful not only for reducing the temperature, first of the surface and then of the interior of the body, but for relieving headache and other distressing symptoms, removing congestion of the kidneys, warding off delirium and coma, and rousing the nervous system in cases of excessive stupor. The circumstance has perhaps been too much lost sight of, that cooling the body may not influence the conditions on which the development of heat depends; but with reduced heat it may be assumed that there will be diminished metamorphosis, to the non-elimination of the products of which many of the dangers of fever are due. In point of fact, Schroe-

* *Medical Reports on the Effects of Water, Cold and Warm, as a Remedy in Fever.* By James Currie, M.D., F.R.S., 1804.

† Article "Continued Fever" (*Library of Medicine*, vol. 1, 1840).

der, of Dorpat, has ascertained that cold baths effect a marked diminution in the excretion of carbonic acid and urea in fever; * and as this was not attended by any aggravation of the general symptoms, it is fair to attribute it to a retarded metamorphosis of tissue.

Statistics have been appealed to to prove the great success of the cold water treatment of fevers (particularly of enteric fever) as contrasted with that of an expectant method; and, although other conditions not stated may have helped to influence the result, they suffice to show that the practice is not beset with the dangers commonly imagined. But the most conclusive facts in favor of the practice are those observed in certain cases of hyperpyrexia by Dr. Wilson Fox † and others, where its employment was followed by recovery from an elevation of a temperature (110 deg. Fahr.) which, under every other method of treatment, has been speedily followed by death. At the same time there are many cases of pyrexia in which the cold affusion or immersion would be unsuitable or injurious. It is likely to be of the most service when the temperature is under 102 deg. Fahr., or when the extremities are cold, although the temperature of the central parts of the body be high; and it must always be employed with caution when there are the signs of weakened cardiac action or of stagnation of blood in the capillary circulation, although it may be noted that in one of Dr. Fox's patients, who was apparently rescued from death, the face was cyanotic, and the radial pulse imperceptible.

There are different plans for employing cold water in the treatment of pyrexia, such as the cold affusion practised by Currie, packing in a cold wet sheet resorted to by Brand, or immersion in cold baths. The last is the method now most in fashion. The patient is placed in a bath having from 50 deg. to 70 deg. Fahr., or better, as Ziemssen recommends, in one whose temperature is about 10 deg. below that of the body, but which, after the patient's immersion, is gradually cooled down to 68 deg. by adding cold water. He should remain in the bath for half an hour, or until shivering comes on, and all the time he is in the bath his limbs ought to be rubbed by assistants. He is then to be hastily dried and put into a warm bed. For some time after the bath, the temperature in the rectum continues to fall as the trunk parts with its heat to the extremities; but as soon as the temperature in the rectum rises again to 104 deg., the patient ought to have another bath. In the early stages of the fever, as many as seven or eight baths in the day may be necessary. When cold affusion or

* Ueber die Einwirkung kalter Bäder auf die Gas- und Harnstoff-Ausscheidung beim Typhus.—*Deutsch. Archiv klin. Med.*, 1869, Bd. vi., S. 385.

† *On the Treatment of Hyperpyrexia by Means of the External Application of Cold*. London, 1871.

immersion is contraindicated or inexpedient, frequent sponging of the surface with cold or tepid water will also help to cool the body, and is often a source of much comfort to the patient.

Quinine in large doses has an undoubted influence in lowering the temperature of pyrexia. In most cases of severe pyrexia, ten, fifteen, or twenty grains will, within an hour or two, cause a fall of the temperature to the extent of three or four degrees, and to a less degree of the pulse.* It is true that the effect passes off after a few hours, and that there is no good evidence (except in malarious fevers) of its cutting short the natural course of the attack; but the effect may be maintained by a repetition of the dose; and the remedy has often appeared to me to be of signal service when a pyrexia was at its crisis, and when the temperature was rising in place of falling.

Digitalis, Aconite, and Veratrum Viride have a marked power in reducing the pulse, and, to a less extent, the temperature in pyrexia, and are, in my opinion, too much neglected for these objects in practice. *Veratrum viride* is largely used in America in the treatment of fevers, and its effect upon the pulse is speedy and most decided; the only objection to its use in private practice which my experience suggests is its liability to induce sudden nausea and faintness, but these symptoms are transient, and cease on the administration of a stimulant. Ten or fifteen minims of the tincture may be given every four or six hours. *Aconite* is a remedy of great value for reducing the pulse and temperature in fever, and especially in the pyrexia resulting from local inflammations, and is much less used than it deserves to be. *Digitalis* is another remedy which I have often found very serviceable in various forms of pyrexia. While increasing the force of the cardiac contractions, it diminishes the frequency of the pulse, reduces the temperature, and increases the flow of urine. Lastly, *antimony* reduces, in a marked degree, the frequency of the pulse in pyrexia, and promotes diaphoresis and mucous secretion. It was at one time largely used in all fevers, but in many it is contraindicated by its tendency to weaken the contracting power of the heart.

4. The nutrition of the body must be maintained by appropriate food, in the form of milk, beef-tea, eggs, and farinaceous articles. Not long ago it was a custom to starve fevers; and you may probably have heard that the late Dr. Graves, of Dublin, who was mainly instrumental in doing away with this objectionable custom, expressed a wish that his epitaph might be "He fed fevers." The modern tendency, however, is perhaps to over-feed fevers, and especially to give

* For evidence on this point, see Report of a Committee (of which I was a member) of the Clinical Society.—*Trans. Clin. Soc.*, 1870, vol. iii.

too much nitrogenous food. Dr. Parkes has shown that there are theoretical objections to a purely nitrogenous diet in fevers. It is doubtful if the disintegrating nitrogenous tissues can be fed; and in that case the albuminous food must be got rid of by the already over-tasked glandular organs. Milk is in most cases preferable to beef-tea as an article of diet in fevers.

In many cases of fever it will be necessary to give stimulants. You must not give stimulants simply because the patient has fever. Many patients with fever do better without them. But you must not refrain from giving stimulants when the heart shows signs of weakness, as happens in the advanced stages of most protracted fevers. The heart may be artificially stimulated by sinapisms and other irritating applications to the skin, but better by the internal administration of ammonia, ethers, and alcohol, in quantities proportioned to the weakness of the heart and pulse.

5. In every case of pyrexia, you must combat dangerous symptoms as they arise. Stagnation of blood in the pulmonary capillaries, impeding the aëration of the blood, is to be met by stimulants, such as alcohol, carbonate of ammonia, and ethers. Digitalis, by strengthening the heart's action, and turpentine, which seems to stimulate the capillary circulation, are also useful under these circumstances; while advantage will likewise be derived from mustard and linseed poultices to the chest, and from warm applications to the feet. When uræmic symptoms predominate, the action of the skin and bowels is to be promoted, digitalis and saline diuretics may be given to increase the flow of urine, sinapisms and linseed poultices are to be applied over the loins; while attempts may be made to rouse the patient by cold affusion to the head, by blistering the shaven scalp with liquor ammonia, and by sinapisms to the nape and feet. In many cases of fever you will also be called upon to relieve distressing symptoms—such as diarrhœa, pain, sleeplessness, and delirium—which, if unchecked, hasten exhaustion and prevent recovery.

6. You must counteract, as far as possible, secondary complications, which will vary according to the primary cause of the pyrexia, and which always add to the patient's danger.

Lastly, I would caution you against two errors in the treatment of pyrexia:

1. You must take care that the remedial measures which you adopt in no way thwart the natural modes of recovery, or favor the natural modes of death.

2. At the same time, you must not be content with adopting a treatment of pure expectancy. You must not forget that the natural termination of pyrexia may be death, as well as recovery.

Hyperpyrexia Treated by Cold Baths.—In the *Practitioner* of March 1, 1872, Dr. Jno. Haddon details two cases strikingly illustrative of the value of cold baths in hyperpyrexia.

ELIMINATIVE TREATMENT OF CHOLERA.

DR. KACZOROWSKI, in an article on an epidemic of cholera, which prevailed in Posen in 1866, published in the *Berliner Klin. Wochenschr.* for January 8th, speaks favorably of the eliminative treatment of cholera. The result, in a number of cases which he had observed in hospital and private practice, led him to believe that the cholera-poison is excreted through the bowels, and sometimes through the lungs; that its passage into the blood thickens this fluid and paralyzes the heart; and that this occurs the more rapidly the earlier the intestinal evacuation is arrested. He asks whether the fact that the suppression of the intestinal evacuation is a bad sign, is not a guide to the treatment. In 1852 he had observed the good effects following the use of evacuants, especially ipecacuanha as an emetic and calomel as a purgative; and he made the same observation in 1853, 1855, and 1856, but found that in some cases the use of mercury was followed by tedious stomatitis. In 1866 he gave castor oil and wine, with quinine during the stage of reaction. The following was the mode of treatment which he followed. When the patient was seen in the early stage he was in bed and covered with a blanket; a cold compress was applied over the head and abdomen; iced water was given him for drink; and a tablespoonful of castor oil, with a little camphor or peppermint, was administered. If the oil were vomited (which frequently occurred), the dose was repeated, and the patient was kept in the horizontal position, no drink being given for twenty or thirty minutes. In the course of an hour or two there were usually several stools mixed with flocculent matter (intestinal epithelium). This was followed by cessation of the anxiety and restlessness, and of the vomiting and abdominal symptoms; the extremities began to recover warmth, and the pulse became slower and fuller. The muscular cramps were obviated as far as possible by rest, and, when they occurred, were relieved by extension made by the attendants. In most of the acute cases this treatment, Dr. Kaczorowski says, was sufficient to arrest the disease. If the symptoms returned after some hours (which not unfrequently happened), the dose of castor oil was repeated, with the results already described.—*Medical and Surgical Reporter*.

DELIRIUM TREMENS.

IN a paper by Dr. John Burke, in the *Medical and Surgical Reporter* of April 13, the following conclusions are arrived at :—

1st. That delirium tremens is a blood-poisoning produced by alcohol.
 2d. That the disease is self-limiting like any other blood-poisoning, that is, the system will throw it off, provided it is not overwhelmed by the strength of the poison.

3d. That most cases will commence to get well within ten days, though I have seen cases where the disease was prolonged to three weeks, whether by the doctor's treatment or the force of the disease, I cannot state positively.

4th. That the rational treatment is to cease all alcoholic stimulants, and to give in place of them such nutriment as the stomach can easily digest, as animal broths, and in well-regulated quantities.

Careful watching is absolutely essential. The patient should never be alone, whether sleeping or waking.

5th. Though we have no antidote to the poison, yet we can, by restoring the secretions, ward off bad symptoms, and help to eliminate the poison from the system by a proper course of remedial means, already enumerated. When subsultus tendinum and profuse sweating are the chief features of the disease, quinine and iron are the proper remedies. To allay nervous excitement and cause rest, the choice lies, I think, between bromide potass., chloroform, and chloral hydrate. In some cases these drugs have a well-marked effect, but in other cases you will be disappointed by them. In some strong, vigorous men, the walking, so as to completely tire out the patient, will produce sleep; but he must be kept walking until he really is tired—from five to ten miles, if need be; he must be pushed forward until he cries for mercy, to allow him to lie down and sleep.

6th. Opium in small quantity has no effect on the disease. In large doses it is dangerous, if not fatal. Even in large doses it may not cause sleep. We know that the vast majority of delirium tremens patients will get well. We should not, therefore, jeopardize the lives of people, even if we were certain that we could shorten the disease.

7th. You should never pronounce too favorably on delirium tremens. Let your prognosis be guarded, for in a day some complication may arise that will alter the whole case.

MAMME APPLE.*

DR. JUAN CALISTO OXAMENDI called the attention of the Academy to the water of the seed of the mamme apple (*Lucumæ Mammosæ*).

* Translated by my pupil, John Guitéras.

After having stated the advantages which it presented to Cuba as a tropical product, over all the other vegetable cyanogenous preparations which suffer so much in the importation, Dr. Oxamendi passed on to announce how little had been said about the medical properties of the fruit. He quotes from Descourtilz:—"The fruit before its maturity possesses astringent properties which make it useful in cases of intestinal atony, and for the control of rebellious chronic diarrhoeas, taking care not to interfere with these evacuations when they are critical, or in any way salutary. The ripe fruits constipate like the medlar, and enter into the composition of the gargles used in catarrhal anginas." Griffith in his *Medical Botany* (Philadelphia, 1847) only copies from Descourtilz.

If the composition of this seed became well known, there would be no difficulty in administering it, either in an emulsion with some other emulsive seed, or in the shape of a water, which Dr. Oxamendi asked Mr. François Figuerra to prepare for him in the same proportions used in the French Pharmacopœia. Mr. Figuerra also made an analysis of the seed, separating the prussic acid in the shape of cyanide of silver; he found that thirty grms. or one ounce of the water contains about 0.019 of the anhydrous acid, or 0.19 of the medicinal. Dr. Oxamendi compares this proportion to the proportion of acid contained in the water of the cherry laurel, as prepared by the *Codex Medicamentarius Gallicus*, and finds that in 100 parts the former exceeds the latter by 0.13. He proposes for future investigators to determine whether the activity of the seed is due to the two principles amygdaline and emulsine.

As to its therapeutic applications, Dr. Oxamendi says they are the same as those of the acid, and in their study he follows Nothnagel's new treatise on pharmacology, and quotes him as saying that prussic acid has been abused, so experience has shown, and that its use ought to be limited to cases of hyperæsthesia, which manifests itself by reflex action, as in cardialgia and vomiting. But not in gastralgia due to organic lesion, as chronic inflammation, ulcer, or neoplasms, in which cases Budd has seen the pain increased by its use. It is also used to soothe coughs not accompanied with fever, and with little expectoration. Dr. Oxamendi puts, in a mixture of 120 grammes, from 5 to 10 of the water with 15 grammes of simple syrup, or syrup of acacia. When he cannot procure the water, he makes this emulsion:—

R.—Seminis pistaciarum mani 30 grammes, seminis lucumæ 8 gram. ft. cum aq. destill. 200 gram. emulsio, cui adde syrapi sacchari 30 gram. ft. haustus. Sig., a tablespoonful every hour. By adding to this mixture 15 of nitrate of potash, he uses the latter when an irritated condition of the alimentary canal would contraindicate its administration.

Dr. Oyamendi says: "Adopting the same proportions of the sweet and bitter almonds which enter into the composition of the emulsive syrup of the Codex, and substituting the former by the peanut (pistacææ pharmaceutically and trachis hypogea botanically), I have had a syrup made which I call 'Syrupus pistaciarum et seminis lucumæ mammosæ,' which I use to sweeten my expectorant mixture for children. I recommend the following in acute epidemic catarrh, or in dentition:—

"R.—Olei sessami orientalis 4 parts, mucilagis gum-arabic, q. s. ad sub-acetatronem, adde aq. destillat., syrup emuls., pistaciarum et sem. lucum. mammos. āā 30 parts extracti folior. Daturæ arboræ 0.1. M. ft. tinctus. The dose is a teaspoonful every two hours."—*Anales de la Real Academia de Ciencias Medicas, Fisicas y Naturales de la Habana*, November 15th, 1871

RHEUMATIC HYPEREXIA TREATED BY COLD AFFUSIONS.

DR. HERMAN WEBER read the history of a case before the London Clinical Society (*Medical Times*, March 23d), in which on the thirteenth day of a severe inflammation the temperature suddenly rose to 108.2° F., the pulse to 148, and the respirations to 56, and simultaneously great restlessness, vomiting, delirium, tendency to coma, excessive micturition, and involuntary discharges made their appearance. The patient was kept for thirty minutes in a bath at 71° F., and affusion of the same temperature simultaneously practised. When he was removed from the bath, the mouth temperature had fallen to 101.8° F., and in ten minutes went down to 98.8°. The patient then went to sleep quietly, perspiring greatly. In the afternoon of the same day the temperature rose again, and the bath and affusion were again resorted to with the result of reducing the temperature to 101° and a subsequent fall during the next hour of three more degrees. After the second bath the affection took the form of a mild rheumatic fever.

ELIMINATION OF ALCOHOL.

A. DUPREE, Ph. D., has read a paper on this subject before the Royal Society of London, of which an abstract is contained in the *Chemical News* of February 9th, 1872. The results obtained (says the *Chemical News*) may be summed up as follows:—

The amount of alcohol eliminated per day does not increase with the continuance of the alcohol diet; therefore all the alcohol consumed daily must of necessity be disposed of daily; and, as it certainly is not eliminated within that time, it must be destroyed in the system.

The elimination of alcohol following the ingestion of a dose or doses ceases in from nine to twenty-four hours after the last dose.

The amounts of alcohol eliminated, both in breath and urine, is a minute fraction only of the amount of alcohol taken.

A very important discovery made by Dr. Dupree was, that, after six weeks' abstinence, and even in the case of a teetotaler, a substance is eliminated in the urine and perhaps also in the breath, which, though apparently not alcohol, gives all the reactions ordinarily used for the detection of traces of alcohol, viz.: it passes over with the first portions of the distillate, it yields acetic acid on oxidation, gives the usual green reaction with bichromate of potash and strong sulphuric acid, yields iodoform, and its aqueous solution has a lower specific gravity and a higher vapor tension than that of water. It was found that after the elimination of injected alcohol had ceased the amount of this substance eliminated in a given time was below the quantity normally excreted, and only gradually rose again to the normal standard.

EMPHYEMA.

In the *Canada Lancet* for February is reported a successful case of Empyema treated by Dr. I. H. Richardson. The method of draining and washing the pleural cavity seems to have been at once novel and effective. It was as follows:—

The chest was punctured by a trocar and canula of one-quarter of an inch in diameter. During the flow of the fluid, an india-rubber tube, about two feet long, just large enough to loosely fill the canula, well oiled and full of water, was passed through the canula into the chest, and the canula was then withdrawn over the tube. The free end was then placed in a basin of water, and about two pints of thick, yellowish white, inoffensive pus were discharged. When it ceased to flow, the end of the tube was securely tied while it was in the water; plasters were then applied to keep the tube in its place, and the whole secured by a broad flannel bandage.

After this the fluid was daily evacuated from the chest by opening and afterwards tying the end of the tube under water. Evidences of blood-poisoning manifesting themselves, after a time the following method of washing out the cavity was adopted:—

After the fluid had been drawn off as usual, the end of the tube was

pinched and transferred to a tumbler of clear water, of blood heat. Upon elevating the tumbler, the water ran into the chest; upon depressing the tumbler the water ran out, mixed with decomposed pus and horribly offensive, shreddy fibrin. The water was changed and the process repeated until the water came out nearly as clear as it went in. A great deal of difficulty was experienced in completely cleansing the cavity, as the tube was often blocked up by the shreds of decayed fibrin; but when this occurred the current was reversed for a time, and by perseverance the cavity was completely cleansed. After this no difficulty was experienced in keeping the cavity clear. Injections were practised by putting glycerine and carbolic acid in the water. After the tube had remained for fourteen months, it became advisable to substitute another for it, which was graduated in inches by nitrate of silver, so that it could be told how much of it was within the chest. The new tube was filled with water and well oiled, and then after running as much water into the chest as would pass in, the old tube was quickly withdrawn and the new one inserted in its place.

The patient, after several years, was enjoying a fair measure of health, there being some discharge through the tube, which he still wore.

STUDIES ON TOBACCO.

IN the *Giornale Ven. d. Sc. Med.*, Dec., 1871, Prof. P. Montegazza gives an excellent memoir on tobacco. He first speaks of the researches of Erlenmayer, who gives the following symptomatology of poisoning by nicotine. Conjunctivitis, diplopia, and amaurosis are not infrequent when tobacco is greatly made use of. The skin takes a yellowish hue, and furuncular eruptions are not rare. Stomatitis, glossitis, and black deposits on the tongue and teeth are noticed. Gastrodynia, mesenteric neuralgia, dyspepsia and feeble appetite are common, serous diarrhoea, and, in severe cases, paralysis of the rectum. Pharyngeal catarrh, bronchitis, hæmoptysis, asthma, and catarrh are caused by smoking. The circulatory system presents palpitation of a special nature, with a certain anxiety. All authors agree that the genito-urinary organs are least affected by tobacco. The nervous system, in general, suffers a good deal from the chronic use of tobacco. Hyperæsthesia and neuralgia are common, and we have already seen that the optic and olfactory nerves are affected, whilst the nerves of general sensation are affected by various hallucinations. There may occur neuralgia of the various branches of the fifth pair, or of the ischiatic, or along the vertebral column. Anæsthesia is greatly pronounced over the whole skin, and especially on the legs. Analgesia also is complete.

There is muscular weakness, greater or less, especially in the lower extremities, and sometimes so grave that the patient cannot stand on his feet, and when seated must lean against a solid body. The horizontal position is the least grave. There also may be tremors in the limbs, uncertain gait, convulsive movements. Vertigo is an important symptom, which is conjoined with a sensation as if the eyes were continually rolling. The intellectual and moral functions are perturbed with a well-marked nervous irritability, with anxiety, with the terror provoked by frightful visions, with dulness of thought, melancholy, and timidity. In some cases there occurs true delirium accompanied by trembling, as in chronic alcoholism; in other cases there is profound melancholy, alternating with great exaltation, and with precordial anguish, and lastly, it may give rise to mania. Some observers have also noticed dementia.

Dr. D. Petrera made experiments on frogs with tobacco, and found the acceleration of the respiration first taking place, to be followed very quickly by stoppage of respiration, stupor, palsy of the upper extremities, and congestion of all the viscera. Sichel speaks of amaurosis of tobacco-smokers. Brodie accuses tobacco of injuring the race. Tiedemann speaks of the evils done to boys by smoking. Boys who smoke become weak, irritable, pallid, and thin. Cacopardo, of Rome, and Professor Scalzi, have spoken much against tobacco. They accuse nicotine of causing phthisis. Decaisne also says it lowers the intelligence of young men. King James in his work, "*rem turpem visu, olfactu insuavem, cerebro noxiam, pulmonibus damnosam,*" and adds that by means of tobacco "*Corporis sanitas atteritur, res familiaris arroditur, dignitas gentis senescit domo, vilescit foris.*" (*Misocapnus*, 1644.) Men have discovered in smoking a new pleasure, but also a new sorrow. And the race would have been far happier if it had never known tobacco. The evils of tobacco are—that it diminishes the general sensibility, and lowers public morality, makes the air in rooms unwholesome, takes men away from woman's society, sometimes produces severe poisoning, diminishes the working power of a people, and adds a heavy expense to the poor, and it shortens life, easily prompts to drinking, may cause amaurosis; it retards the growth of the young, causes nervous disease of all kinds, palpitation of the heart, asthma, weakens the will and the thought, and genital organs; weakens the digestive organs, and the whole organism and its muscles.

On the other hand, it gives pleasure, is a mild purge, creates a new industry, sometimes assists thought, and is a kind of poetry to the poor, renders hungry persons less miserable, and calms for a time physical and moral suffering.—*The Doctor*, March 1, 1872.

SCIATICA.

SOME cases of this disease which had resisted a variety of treatment were cured at Bellevue Hospital, *almost at once*, by the hypodermic injection of morphia over the seat of pain, plunging the needle deep into the tissues, perhaps to the depth of one or one and a half inches. —*Med. Record*, March 15, 1873.

ON THE INFLUENCE OF PHOSPHORUS UPON THE ORGANISM.

DR. GEORGE WEGNER (Virchow's first assistant) has an elaborate paper upon this subject in Virchow's *Archives* of June 22. The first portion is devoted to a brief discussion of acute phosphorus poisoning, in which nothing new is developed, unless it is that the whole arterial system down to the microscopic arterioles is affected equally with the central organ, the heart, by the fatty degeneration that follows the ingestion of a lethal dose of the poison, and as a result of this, excessive uterine hemorrhage occurs in menstruating subjects, with also hemorrhage in the ovaries. Dr. Wegner then discusses our knowledge of chronic phosphorus poisoning, which rests chiefly upon the monograph of Von Bibra (*Die Krankheiten der Arbeiter in den Phosphorzündholz-Fabriken*. Erlangen, 1847). Von Bibra fed rabbits for months with phosphorus, but without satisfactory results, as nothing definite was developed.

As is well known, the usual recognized symptoms of chronic poisoning is necrosis of the jaw; but in January, 1871, the following case came under Dr. Wegner's notice:—

A fringe-maker, 18 years old, had received a severe contused laceration of the right leg, from a wagon-wheel. The patient, until a short

time previous, had worked from his fourth year in a match-factory, without showing, however, any indications of suffering from the phosphorus. Whilst the wounds were granulating there came on hospital gangrene, and after this was cured by the use of strong caustics, there were developed high fever and gangrenous periostitis of the tibia, which bared the bone to the knee-joint. Finally amputation through the thigh was performed, and at the operation it was noticed that the periosteum, although normal in appearance and thickness, was but slightly adherent to the bone. Afterwards it separated from the femur clear to the trochanter minor, so that there was left six inches of dead bone, and the patient finally died of hectic exhaustion.

At the *post mortem* there were found gangrenous periostitis of the lower third of the amputated femur, with commencing central and cortical necrosis, putrid osteomyelitis, metastatic infarctions of lungs, kidneys, liver, spleen, and muscles, phlebitis, etc. After maceration there was revealed hyperostosis of the skull, slight ossifying periostitis of the alveolar edges of both jaws, with the teeth intact, and more pronounced osteoporotic layers upon the epi- and apo-physes of the extremities.

This case caused Dr. Wegner to experimentally study the subject, and as the effects of the phosphorus fall chiefly upon the digestive system and the bones, his results are told under two heads.

Influence of phosphorus on the digestive system.

If a rabbit be fed upon gradually increasing doses of phosphorus, or exposed to air loaded with its vapor, there is, after some weeks or months, under proper regulation of the amount ingested, developed a hyperæmia of the mucous membrane of the stomach with hemorrhagic infarctions, and finally the membrane becomes three times as thick as normal, and has a brown color. Simultaneously there is induced in the liver a chronic inflammation, which affects the *interstitial tissue*, attacking first the cellular tissue surrounding the acini, causing hyperplasia of it, and finally atrophy of the gland-cells by pressure, with previous arrest of secretion by pressure upon the vessels and ducts. The organ becomes swollen and livid, sometimes remaining so, sometimes undergoing a gradual transformation into the classical hobnailed liver, sometimes changing into a shrunken, irregular mass, deformed by contracting bands.

Influence of phosphorus on the osseous system.

Dr. Wegner divides this heading into: 1. *Experiments in which the vapor of phosphorus is brought immediately into contact with the periosteum.* 2. *Those in which the drug simply reaches the periosteum through the circulation.*

No. 1. If rabbits be exposed for some weeks to an atmosphere of phosphorus-vapor, after the first state of bronchial irritation they usually

become accustomed to it, and do not seem to suffer, and in the macerated skull the only abnormality to be seen is a fine osteophytic periosteal layer upon the nasal bones. In a very few cases, however, bony swellings appear in the upper or lower jaws, with great enlargement and caseous infiltrations of the soft parts, which changes constantly increase until the animal's eating is so interfered with that it starves to death. After maceration there are found in such jaws enormous osteophytic growths, generally starting from the alveolar margin, and in the lower jaw involving the whole horizontal ramus, in the upper often extending to the nasal, lachrymal, and even frontal bones; there is also partial necrosis of the original bones—in a word, changes similar to those seen in man under like circumstances.

The fact that both in match-makers and animals only a small proportion of those exposed suffer, points to an individual predisposition. This has been found, in man, generally to be caries of the teeth, but sometimes a wound of the jaw, and in rabbits Dr. Wegner has found the same rule to hold good. If a piece of mucous membrane be snipped off the inside of the jaw of a healthy rabbit the wound soon granulates, but if the animal is being exposed to phosphorus-vapors the changes previously noted are set up. That the action of the phosphorus is a local one, Dr. Wegner thinks is shown by the following facts: 1. The periosteal changes do not occur when the phosphorus is given in pill form, even when the periosteum of the jaw is severely wounded after and during the continuous administration of the drug for months. 2. When the tibia is partially bared in the healthy rabbit, by removal of soft parts, a granulating wound results in the healthy animal; but under exposure to the phosphorus atmosphere—periostitis similar in character to that which occurs in the jaw.

From these experiments Dr. Wegner draws the conclusion that the phosphorus necrosis of match-makers is a purely local disorder, and not the expression of a constitutional affection.

No. 2. If an animal be fed with doses of phosphorus too small to affect the stomach and liver for a length of time, certain changes are induced in the bones, changes which appear sooner and are more marked in growing animals than in adults. At the position where spongy tissue ought to be formed in the growing bone, dense, solid tissue arises, which, to the naked eye and microscope, reveals the structure of well-formed bone. The spongy tissue already formed does not change; it is the new bone whose formation is altered. If the feeding be continued the dense mass at the end grows larger and larger, and the old spongy tissue, in accordance with the physiological law, is absorbed to make room for marrow-tissue, until at last the bone has no spongy tissue left. After this the solid newly formed tissue itself be-

gins to be absorbed; the oldest, first developed portions are changed into red marrow-tissues.

During the feeding, changes also occur in the bony substance formed by the outer periosteum; the new bone looks normal, but under the microscope is seen to be filled with dense masses, which encroach upon the Haversian canals, and finally there is a general narrowing of these canals, which affects even the bone formed before the taking of the phosphorus.

In regard to the effect on the bones of the regular ingestion of phosphorus from birth to adolescence, Dr. Wegner made some experiments without very satisfactory results; he explains at length the great difficulties which beset such inquiry, but we have not here space to follow him. Suffice it to state, that the indications seem to be that development is hastened, and still more doubtfully that the actual mass of the bones is increased.

If small doses of phosphorus be given continuously to the adult animal, the spongy tissue in the long and short bones is thickened, and the compact tissue rendered more dense. After a time new bony tissue is deposited on the inside of the shaft of the long bones, encroaching upon the marrow cavity. This may continue until the bone actually becomes solid. The process does not go on *pari passu* in the different bones. The general course is, tarsus, tibia, bones of the forearm, femur, humerus. There is no corresponding hypertrophy of the muscles, and the movements of the animal become, in consequence of the weight of the bones, very slow and awkward. The analysis of the bones shows that their constitution is about normal.

Dr. Wegner occupies some pages with the discussion of the therapeutic effects of phosphorus on osteomalacia and rickets, but has had no sufficient opportunities to arrive at any definite conclusion. He, however, states, as the result of experiment, that the callus thrown out after fractures, resections, etc., is more dense when phosphorus is given than it is under other circumstances, and that the formation of new osseous tissue is also accelerated.

Theory of Chronic Phosphorus Poisoning.—Dr. Wegner, after discussing the theories of acute phosphorus poisoning briefly, and pointing out the difficulties of the subject, proposes the question: Is it phosphorus or one of its compounds (and if so, which one) in the blood which causes the symptoms of chronic poisoning? When phosphorus is taken into the stomach, he says, it is evident that it must be absorbed, either as phosphorus, phosphuretted hydrogen, or phosphoric acid, and as the second of these compounds would of necessity undergo immediate oxidation as fast as formed or absorbed, the question is narrowed down to the other two. He has found by experiment that

it is impossible to produce by the administration of phosphoric acid in any way or quantity the peculiar changes in the stomach and liver seen in chronic phosphorus poisoning—a chronic gastro-intestinal inflammation may, indeed, be set up; but it is catarrhal, non-specific, entirely distinct from the nutritive changes of phosphorus poisoning; further, the liver is never affected by the acid.

The influence on the bony system is not so clear, because it is possible by the continuous administration of very large doses of phosphoric acid to cause thickening of the bones of growing animals. Yet to do this 800–1000 times the proportional dose of the acid is required; smaller quantities have no effect, and it appears most reasonable to believe that the phosphorus acts as phosphorus simply.

The next question Dr. Wegner approaches is, whether phosphorus acts directly by a specific action on, or irritation of, the bone-forming tissues, or indirectly by offering more phosphates to them. He decides that the action is a direct one, for the following reasons:—

First. The newly-formed tissue of chronic phosphorus poisoning certainly is in its first stages soft, cartilaginous. Second. There is no excess of phosphates in the bone even after the most prolonged use of the drug. Third. When the food is deprived of lime the same new tissue arises, but it remains in the soft cartilaginous condition. Dr. Wegner finally closes his essay with a discussion of the bearing of his discoveries upon the therapeutic use of phosphorus.

THE THERAPEUTIC VALUE OF THE MURIATE OF LIME.

In the *Edinburgh Med. Journal* for July Dr. Begbie has an elaborate memoir upon the therapeutic value of muriate of lime, in which he gives a review of the English literature on the subject as well as his own experience, which he states to have been large. He says, that, as stated long ago by Dr. Beddoes, the salt is of very great value in the chronic diarrhoea of children, associated with feeble appetite, anæmia, enlarged belly, and hectic symptoms. He also adduces much testimony as to its remarkable efficacy in cases of scrofulous taint with enlargement of the cervical glands, confirming this testimony by his own experience. In such cases he has seen the most brilliant cures under its use, after the complete failure of iodine, cod-liver oil, and all the other orthodox remedies. In some cases it requires to be taken for a long time, in some instances even for months, before its beneficial effects are seen; generally, however, the glands begin to soften and lessen in size after a few weeks, and the general symptoms consenta-

neously to improve. The salt has a disagreeable, mawkish taste, to which patients generally soon become accustomed, especially when the drug is taken in milk. Dr. Begbie also affirms that the chloride is of equal value in acquired and hereditary scrofulous adenitis. He states that he has used it with great benefit in *tabes mesenterica*. In Paris he saw it used many years ago by Cazenave with asserted success in lupus. The dose for an adult is from ten to twenty grains three times a day, gradually augmented to thirty grains, unless symptoms of local gastric disturbance are developed. The Doctor is partial to the old solution of the *Edinburgh Pharmacopœia* as a ready means of administering the drug. To young children the commencing dose is from two to six grains. It is best administered in milk, shortly after meals, although it may be given with impunity on an empty stomach.

XYLOL IN SMALL-POX.

DR. JAMES B. RUSSELL has a paper in the *Glasgow Med. Journal* for May, in which he analyzes and shows the insufficiency of the evidence that xylol has any specific virtue in variola. He also reports a number of cases in which he has used it, and further says:—

“I have used xylol in other cases than those; but not observing any obvious effect, I have not prosecuted its further use. I may remark that the progress of the disease, its complications and its sequelæ, seem to me to be recognizable in those cases exactly as if no xylol had been introduced. We have persistent delirium, pulmonary congestion, erysipelas, pulmonary gangrene, and numerous boils, these latter being rather inconsistent with any antiseptic theory of the action of xylol.

“In the preliminary notice, to which reference was made at the beginning of this paper, it is stated that Dr. Zuelzer has been in the habit of using xylol in *Tic douloureux*. From observations of its effects on myself, I am sure that in doses of min. xx. to min. xl. xylol acts as a peripheral sedative. In about ten minutes after taking the larger dose on an empty stomach, numbness and languor were felt in the limbs, and in fifteen this had increased so that one leg resting on the other, or the hand resting on the thigh, gave but a dull sense of pressure. Locomotion was uncertain and languid; and the intellect was drowsy, but without marked stupidity. This condition disappeared slowly.

“One word as to the administration of xylol. In water it is very acrid. It makes an imperfect emulsion with yolk of egg, and it is

soluble in rather more than its own bulk of spirits of wine, and also in all proportions of olive oil. The spiritous solution was rejected, both because the spirits of wine is itself an active agent, and might have vitiated the results ; and also because the olive-oil solution was found to be so eligible. In equal parts it forms a perfect solution, the resulting liquid having none of the viscosity of oil, pouring readily and being quite palatable without dilution. A teaspoonful gives the usual dose of min. xxx.

APOMORPHIN.

IN the *Glasgow Medical Journal* for May is a translation of a paper by Dr. Franz Riegel and Dr. Rudolf Boehm on apomorphin, in which a sketch of its history is first given, and then a number of experiments on man detailed.

A one per cent. solution was used. The experimenters found that Merck's specimen acted more slowly and more disagreeably than the English. In summing up the results with the latter they say :—

“First of all, as regards the *dose* administered in man, it varied between .003 and .011 grms. In four cases it was 3 mgrms. ; in three, it was 4 mgrms. ; in three, it was 5 mgrms. ; in one, it was 7 mgrms. ; and one, 11 mgrms. But it must be observed, that in all these cases the effect was the same ; that in none of them, beyond the emetic effect and the variations of pulse and temperature accompanying the act of vomiting, did further concomitant effects or consequence appear even with the largest doses. As we have convinced ourselves, through frequent repetition of the experiment with different large doses in the same individual, the administration of twice or thrice the quantity of the dose from which an effect has been already proved to follow, produces no more result than that from the smallest efficient dose. It must certainly, therefore, be reckoned not the least important property of apomorphin, that its administration has great scope, and that even large doses may be used with safety.

“As a second important element we must mention the smallness of the active dose of our drug.

“As a third, and most important peculiarity of our drug must be mentioned the possibility of its employment subcutaneously. We may specially remark that we never observed, either in man or animals, any local irritation at the point of injection ; neither has the act of injection been accompanied by special pain, apart from the mere manipulation of the needle. We may add that we have ex-

perimented with different strengths of our preparation, but that neither with one per cent. nor with five or ten per cent. solutions has irritation been produced. The part of the body selected is of no importance as regards the ultimate result. The advantage of the administration of emetics thus must be very apparent in the treatment of children, and not unfrequently even in adults, in cases of poisoning, and where there is coma or loss of consciousness, and in many other cases.

“A fourth, and certainly not unimportant property of our drug is to produce its specific action comparatively soon after introduction, and after very short preliminary symptoms, and sometimes even without any.

“The difference in this respect, in comparison with the other emetics, requires no comment. We may here record an observation which we made both on the English preparation and on Merck's, viz. : that while apomorphin preserved in the form of powder seems not to lose its activity in the least, as is evident from the circumstance that after more than a year our English preparation showed striking results, still, once dissolved it seems very soon to decompose and lose its strength. We were able to demonstrate in the solution a daily diminution of activity, though it still, in comparison with other emetics, continued prompt. Further observations will test the accuracy of our remark.

“We must lastly point out a fifth agreeable property of this substance—that, as may be partly explained by the rapidity with which it acts, comparatively very trivial and transient collateral effects occur, especially never unpleasant after-effects such as accompany tartar emetic. In many cases vomiting took place quite rapidly without any previous symptoms, and after one or more acts of emesis the patient felt perfectly well. At most, a few general symptoms for a short time preceded and succeeded the act of vomiting, and the duration of these symptoms was always much shorter than attends any hitherto known emetics. Generally several minutes passed after the introduction of the apomorphin, during which there was no objective or subjective change. Soon there set in headache, giddiness, especially a frequently expressed inclination to yawn, and a variable degree of faintness. In not a few cases vomiting was preceded by the outbreak of perspiration, more or less copious, sometimes over the whole body, at other times confined to the face. Along with this there was frequently drowsiness and a certain amount of apathy. As soon as emesis was over, the symptoms above mentioned always began to disappear. The actual vomiting was preceded, though not in all cases, and only for a short time, with eructations and retching. In a few cases vomit-

ing came on so suddenly and unexpectedly that, without any previous warning, at one bout all the contents of the stomach were expelled. In these cases, generally, the symptoms also following the act were so slight that the patient had scarcely any discomfort immediately after. But always (and this is of much importance in contrast with other emetics), in all cases, the patient was perfectly well again very shortly after vomiting, and only in the later observations, in which a less active preparation was used, were the after-effects somewhat prolonged, though even then, in comparison with other emetics, they were both much shorter and much less severe.

“With reference to the action of apomorphin on the eye we have only negative results to show. In none of our experiments was any obvious alteration of the pupil observed. As regards the pulse, the same effects were not observed in all cases. In many cases the pulse fluctuated within slight limits before emesis, until during the act it became moderately quickened, but, however, shortly after the cessation of vomiting, either immediately or after rapidly sinking below the normal, returned to its former figure. In other cases again a distinct increase in rapidity set in shortly after the injection, but in general, as anxiety, malaise, drowsiness, and perspiration occurred, gave place to a diminishing rate. At the same time there was a decided diminution in the strength and volume of the pulse. With the act of vomiting there again came a considerable acceleration, after which, whether further vomiting followed or not, the pulse either returned to the normal or again presented the above character. Always according to the duration of this stage of depression, the pulse remains for a corresponding length of time distinctly slower, of less volume, and softer than before.

“The respirations generally, if no fortuitous mental influences existed, were at first unchanged, immediately after the injection.

* * * * *

“We have already noted the valuable property peculiar to apomorphin among emetics, the absence of secondary effects. Our results agree with those of Matthiesen and Wright, and also Siebert. More particularly the intestinal canal, which is often excited by other emetics to sympathetic action, is not affected except in emesis; and we have never observed pain in the stomach, gastric derangements, diarrhoea, or any similar symptoms.”

In the *Union Pharmaceutique* for June, 1872, is a paper by Dr. Meyer, translated from *Nieuw Tijds. voor Pie. in Nederland*, which contains, however, nothing new, but calls attention to the observation of H. Blaser (*Apothek.-Zeitung*, 1872), that an aqueous solution of

apomorphin changes into a deep emerald color in twelve hours, and becomes unfit for use. Dr. Meyer confirms the superiority of the English apomorphin over the German.

ON THE TREATMENT OF VARIX BY SUBCUTANEOUS INJECTIONS OF ERGOTINE.

BY DR. PAUL VOGT.

CH. RAUSHENBERG, M.D., translates (*Atlanta Med. Journal*) as follows:—After the observations of Von Langenbeck in relation to the cure of two aneurisms by subcutaneous injections of ergotine (*Berliner klinische Wochenschrift*, 1869, No. 12, p. 117)—followed, first, by a communication of Schneider, made at the meeting of the Society for Scientific Medicine, at Königsberg, on the 25th of May, 1869, on the cure of an aneurism of the femoral artery, and finally by one from Dutoit (in *Von Langenbeck's Archives*, vol. xii.) on the cure of one of the subclavian artery by the same means—had almost beyond a doubt established the effect of the preparations of ergot on the blood-vessels, particularly in the form of subcutaneous injections of ergotine, as they were first used by Drasche, of Vienna, against hæmoptysis (*Centralblatt für medicin. Wissenschaften*, 1868, No. 52), I commenced last summer a series of experiments in relation to the effect of ergotine in other morbid conditions of blood-vessels.

I first tested its effect in a disease in which our surgical remedies, as far as a radical cure is concerned, have been almost entirely powerless, to wit, *in varicose veins in the leg*. As the leading principle which so far has governed the radical treatment of varices—the production of more or less extensive obliteration of the cavity of the diseased vein—by whatever method it may be carried into effect, involves dangers much greater than those resulting from the disease itself, we have generally, by our efforts to use only safe methods of relief, been confined to a mere palliative treatment.

The effect of ergotine in this disease was tested with a view of regulating the circulation, and removing expansion and engorgement of the vessels.

A man sixty years old, who had suffered for years from extensive varicose veins of the right leg, was treated with subcutaneous injections of extract secalis cornut. aqu. 2, 0 (3 i.), with spirit vini and glycerine, ana 7, 5 (108½ grs.), in such a manner that principally two localities, where the varices were most largely developed, were used for injections. The outlines of a varix about six centimetres (nearly two inches) long, and as thick as the little finger of the human hand, run-

ning across the tibia, were marked on the surface of the skin by lunar caustic, and about its centre a whole syringe of solution of ergotine (0.12 or $1\frac{1}{4}$ grs.) was injected under the skin every other day. In the course of eight days the varix had totally disappeared, and after the patient had been walking about six weeks in his usual way, no sign or symptom of the old disease could be seen or felt on the place where it existed before.

Another varix, of the size of a hazel-nut, on the external calf of the leg, was made to disappear, in the same individual, by one single ergotine injection under the skin above it.

At the place where the injections had been made, a hard and rather circumscribed infiltration made its appearance, but showed, notwithstanding the thin and atrophic skin of the rather senile individual, no inclination to inflame or become gangrenous, but disappeared without causing any notable pain or inconvenience.

For the purpose of becoming still better acquainted with the effect of ergotine on the blood-vessels, I caused Dr. Potel to institute two experiments, with the intention of—

1. Testing microscopically the effect of ergotine on the vessels of the mesentery of the frog.

2. Establishing sphygmographically the changes of the pulse produced by ergotine.

These experiments were made under the supervision of Prof. Landois,* and established the fact, microscopically and sphygmographically, that ergotine acts on the muscular coat of the blood-vessels, the arteries as well as the veins (Inaugural Dissertation, Greifswalde, 1871).

After this, numerous patients in the surgical clinic and polyclinic of this city, with varicose veins, were treated by subcutaneous injections of ergotine, in the manner above described, and the astonishingly favorable effect of this treatment, even in the most enormous varicose enlargements, was distinctly confirmed. For an explanation of this effect we must take the following points into consideration :—

1. The above experiments and clinical observations demonstrate that the subcutaneous injections of ergotine cause, primarily, a contraction of the muscular coat of the arteries. By this diminution of the calibre of the arteries, which most prominently takes place in the medium-sized vessels, as they are most richly supplied with smooth muscular fibres, the quantity of the blood which reaches the veins is diminished, but the velocity of its motion increased.

2. The ergotine causes also a contraction of the muscular coat of the

* The author of a late work, "Die Lehre vom Arterien-Pulse" (Teachings on the Arterial Pulse)—full of original investigations and important physiological facts.—
TRANSLATOR.

veins; and if in varices of very long standing this faculty of contraction may almost seem to be abolished, it still exists, to more or less extent, in many places along the course of the diseased vessels; and that it is very considerable in varices of not too long duration is demonstrated by the fact that the enormous varices which we frequently see in pregnant women are often, within a few days after delivery, reduced to very common varicose enlargements.

Whether this favorable effect—which, so far, has been clearly established in all cases—will finally prove sufficient for a radical cure, can only be demonstrated by a longer observation and control of the cases treated. The results, however, so far obtained, invite at least further experiment and further application of a remedy which, in all cases, can be used without any danger; and I have already commenced to use it, and partly with favorable results, in other venous diseases—for instance, varicocele, hemorrhoids, and certain forms of angioma.

In order to gain further physiological clues for the therapeutical use of this agent, I endeavored to determine whether the subcutaneous ergotine injections would first and immediately produce contraction of the vessels at the place where they are made, or *whether this effect took place only after absorption, from the centre of vaso-motor action*. The fundamental experiments were the following:

1. Ergotine 0, 12 ($1\frac{1}{2}$ grs.) was subcutaneously injected into the right femur of a frog, and, two hours and a half after, this leg amputated below the knee. Hemorrhage very small, while amputation of the leg of the other side, at the same place and at the same time, shows considerable hemorrhage. The same experiment, repeated twice on other frogs, shows very little difference in the hemorrhage—giving rise to the idea that perhaps the compression caused by the injected fluid occasioned the difference observed in the first experiment.

2. The cervical portion of the sympathetic nerve of a rabbit is divided on both sides as high up as the upper cervical ganglion. After the vascular congestion and increased temperature following this operation, on both sides of the head, is well established, 0, 06 ($\frac{1}{16}$ grs.) ergotine is subcutaneously injected at the base of the right ear. No material difference between the two ears can be noticed within from one-half an hour after the injection up to the next day.

3. After injecting at the base of the right ear of a rabbit 0, 10 ($1\frac{1}{2}$ grs.) ergotine, the cervical portion of the sympathetic nerve of the same side, as far as the upper cervical ganglion, is divided. Soon afterwards, a very considerable engorgement of the vessels of that ear takes place; but the ear on the other side, where the sympathetic nerve has also been divided without previous injection of ergotine, shows the same increased vascularity as the ear of the other side.

After all this we must arrive at the following résumé: That ergotine, subcutaneously injected, causes contraction of the muscular coat of the blood-vessels; that this contraction of the smooth muscular fibres is caused by the intermediation of the vaso-motor centres. Whenever the influence of the latter is interrupted, the effect of ergotine is paralyzed. If ergotine affects the vessels at the place where it is injected with any more intensity than on more distant portions of the body, it may be caused by a direct influence on the peripheric extremities of the sympathetic nerve analogous to the local effect of the subcutaneous injections of morphine, which, besides their general effect, seem to produce, also, a local anæsthesia of the peripheric nerves of the locality where the injection is made.—*Berliner klinische Wochenschrift*, March, 1872, No. 10.

TREATMENT OF THORACIC ANEURISM BY GALVANO-PUNCTURE.

DR. CINISELLI is about publishing a work on the above subject, and has, in advance, printed an abstract in the *Gazette Médicale de Paris*, July 6, 1872. In it he states that he has compiled and studied all the cases on record, some twenty-three in number. These cases are divided into two distinct series, those (nine in all) between 1846 and 1866, and those between 1868 and 1870 (fourteen). The first of these were merely experimentally, and the second were really scientifically treated.

In the first set the disease had advanced beyond all hopeful limits before treatment, yet three of the nine cases were ameliorated.

In July, 1868, a favorable case offered itself to Dr. Ciniselli; it was cured and reported in the *Gazette des Hôpitaux*, 1868, No. 34, and was the first of the second series. In this series seven aneurisms of the cavity of the chest were manifested externally by protrusion of the ribs, pulsation of the intercostal spaces; the other offered a more or less marked tumor posteriorly, with greater or less erosion of the thoracic walls.

Of the purely thoracic aneurisms, three were of the ascending, three of the transverse aorta, or brachio-cephalic trunk. The secondary aneurisms had their origin in primary internal aneurisms, three of the ascending, three of the transverse aorta, and communicated by a large opening with the artery.

The galvano-puncture was practised as in my first case. A Voltaic pile of thirty couples (zinc and copper), disposed in two columns, with saturated solution of salt. The rheophones were so arranged that one

could avoid as much as possible the shock in changing the direction of the current—steel needles, with the two poles successively acting upon them in the well-known manner, to avoid the electro-chemical cauterizations.

The galvano-puncture, so performed, has never given rise to an accident ; the shocks have been very moderate ; in one case all suffering was avoided by anæsthesia. During the operation the formation of an electrical clot was shown by the change in moving the needles, and by the hardening of the tumor ; the extraction of the needles was always difficult, on account of their oxidation, without appreciable effusion of blood.

The operation was shown to be innocent, even in the most dangerous cases, with a very moderate general reaction, and a local reaction readily controllable by the application of ice and lead-water.

In the seven cases in which the aneurism was confined to the cavity of the chest, the amelioration has been prompt and progressive. The relief has, in six of the subjects, now lasted for seventeen months, nine months, eight and a half months, four months, and in two cases three months. The seventh case relapsed and died. The cases of external secondary aneurisms all relapsed and died. At the post-mortems in some of them the electrical clot was still very apparent. It could be distinguished by being central, adherent to the sac at the point where the needles had entered, globose or irregular, and composed of lamellated layers ; also by being whitish yellow, composed of fibrine mixed with much albumen, and containing blood in its interstices. Its chemical composition is different from that of ordinary blood.

The electrical apparatus best fitted for this purpose is one which unites sufficient tension with the least possible quantity—a pile composed of a large number of very small plates meets these conditions. A Voltaic apparatus of thirty plates, of ten centimetres of surface, meets the indications best. The needle-points should be about one and a half centimetres apart, and from two to four centimetres within the aneurismal pouch. In order to avoid chemical action it is necessary to alter the two poles at the end of certain periods of time, mostly from four to six minutes. The duration of a treatment varies from thirty to forty-five minutes, according to the number of needles used.

CUTANEOUS ABSORPTION.

M. BRIMOND, in a communication to the French Academy, arrives at the following conclusions :—

1. Cutaneous absorption is demonstrated by experiment to take place from medicated vapor and water baths.

2. Ordinarily it does not occur at a temperature of 38° C., *i. e.*, one below that of the body.

3. The absorption of iodide of potassium is in proportion to the heat, duration of the bath, and the quantity of iodide of potassium.

4. The elimination of the salt commences after the bath, and generally ceases entirely in twenty-four hours.

5. When ten or twelve baths have been taken, the elimination continues for three or four days after their disuse; if twenty or thirty baths have been taken, it persists for ten or twelve days afterwards.

9. A simple vapor, followed by energetic frictions with soap, facilitates greatly the absorption.

10. The vapor never contains a trace of free iodine, but only iodide of potassium.—*Gazette Médicale de Paris*, July 6, 1872.

Chloral in Puerperal Convulsions.—In the *Dublin Journal of Medical Science* for June, 1872, Dr. McDowell details a case of puerperal convulsions and mania, in which chloral seemed “to act like a charm.”

NORMAL PRESENCE OF ALCOHOL IN THE BLOOD.

UNDER the above caption Dr. H. Ford has a very interesting paper in the *New York Medical Journal* for June. Believing that liver sugar is converted into alcohol in the lungs, he has endeavored to find that substance.

He first made a calculation as to the amount of alcohol generated, supposing his theory to be true, as follows:—

Scharling estimates the carbon given off from the lungs of a man, in twenty-four hours, at 325.31 grammes. Supposing that all of this carbon (which is not strictly true) results from the destruction of hydrocarbon, and that this hydrocarbon is hepatic sugar, 813.26 grammes of this substance would be fermented, producing 415.65 grammes of alcohol, or 6,415 grains. As this quantity represents the entire supply during twenty-four hours, $\frac{6415}{1440} = 4.45$ grains of alcohol would pass through the lungs in one minute; and as by Müller's estimate 76,800 grains of blood is borne through those organs in the same time, we have, by this calculation, $\frac{4.45}{76800} = 0.5794$ of a grain of alcohol present in the lungs to 10,000 of blood. The two results approximate closely enough for such calculations. So that, while no less than 23.05 oz. (Scharling) to 24.36 oz. (Liebig) of glucose should be poured into the circulation within twenty-four hours, representing *about thirteen ounces (av.) of alcohol*, a quantity amply capable of subserving most important functions, whatever these may be, it is impossible that the blood of the vena cava or the lungs should *contain more than the half*

of one part of alcohol in 10,000 parts, even if no particle of alcohol so formed be oxidized.

Impressed with the difficulty of finding such minute amounts, Dr. Ford first made some preliminary experiments, and found that a few drops of alcohol could be recovered from a quart of distilled water, as could also one part of alcohol from 3 or 4,000 parts of blood, even several days after its addition.

He next experimentally determined, that during the incipient putrefaction of blood the disappearance of glucose is due, in part at least, to its conversion into alcohol and carbonic acid, and then, by similar experiments, proved that the same changes occur in decomposing liver and lungs, from both of which he succeeded in recovering alcohol.

Commenting on these facts, Dr. Ford writes as follows:—

These experiments had been instituted as a preparation for the important question, shortly to be proposed, concerning the normal presence of alcohol in the organs and blood of animals. The process by which, after death, organic matter advances to destruction is similar to that by which, during life, its constituents are conducted through their natural metamorphoses. In both cases nitrogenous colloids are eventually resolved into crystalloids. The first step is always the absorption of oxygen. If glucose be in contact with a nitrogenous colloid undergoing oxidation, as a preliminary to further change, its elements group themselves into *alcohol* and *carbonic acid*. I have enjoyed quite unusual opportunities for studying the common processes of distillation, and am convinced that Liebig's views are essentially correct. The formation of alcohol in the fermenting-tun begins with the oxidation of gluten, which consists mainly of *vegetable fibrine*, advances with it, *pari passu*, and ceases with it. If animal fibrine be oxidized in the lungs, it must act similarly, and with equal power; indeed, be far more effective, inasmuch as hepatic sugar is greatly more fermentescible than "grape-sugar." Adopting Virchow's views respecting its tissual origin, *fibrine* is emptied by the lymphatics into the venous system, and borne into the lung-capillaries, where it absorbs oxygen with great avidity. It is in the act of decay, or Liebig's "*eremacausis*." If hepatic sugar be in contact with it at this moment, it must surely be resolved into alcohol and carbonic acid. This alcoholic fermentation must, therefore, be a constant phenomenon, varying directly in rapidity and completeness as the amount of fibrine present and the intensity of oxidation.

After oxidation, if fibrine be left to itself, out of the body, it putrefies very soon. Within the organism it is likewise broken up into simpler bodies, most probably in the liver; for fibrine disappears in this organ—which it reaches by two channels—with a simultaneous

formation of glycogen and fat, biliary acids, and probably uric acid.

Dr. Ford next attempted to, and did obtain alcohol by the repeated distillation of freshly-drawn blood. He gives a long and elaborate account of his methods and precautions, which we omit, merely stating that they appear to have been very skilful and satisfactory both in conception and execution.

The tests which he relied on were as follows:—

1. *Chromic Acid dissolved in Sulphuric Acid.*—By adding 0.25 grammes of crystallized bichromate of potassa to 100 grammes of concentrated and chemically pure sulphuric acid, the salt is decomposed, chromic acid liberated, and a rich brownish-yellow liquid obtained. When to any fluid, containing the feeblest trace of alcohol, an equal bulk of this reagent is added, much heat is evolved, and, by deoxidation of the chromic acid, sesquioxide of chrome is produced, imparting to the fluid an emerald-green hue. This is an exceedingly delicate and reliable test; nothing similar occurs with other volatile fluids obtained from fermented or organic matters; sugar, dextrine, and gum, uric acid, urea, and albumen equally effect this reaction, but must be obviously absent in distilled fluids.

2. *Inflammation of the Vapor of Alcohol in a Test-tube upon Ebullition of the Final Distillate.*—This most striking and important test I have found applicable when not less than two per cent. of alcohol exists in an aqueous fluid; below this percentage the alcoholic vapor is too much diluted with steam to burn even at the first moments of ebullition. Some care is requisite in the use of this test. The quantity of liquid should be about one-tenth of the capacity of the test-tube; the flame over which the tube is held should be very moderate and steady, and should give but little light; the room should be darkened; a wax-taper ready lighted should be held just above the upper edge of the mouth of the tube; the entire length of the test-tube should be heated before the liquid is made to boil, and the tube held in an oblique position by a bit of bent wire, that it may be closely watched, as the least discomposure may prevent our observing the inflammation of the vapor, which is sometimes only momentary. When all is properly done, if alcohol is present in more than one and a half or two per cent., a flash of flame is seen to descend into the tube at the moment of ebullition, or a little after it; and if alcohol be present in greater quantity the vapor continues, for a longer or shorter time, to burn at the mouth of the tube, during the continued boiling, with a characteristic flame. No other substance met with in the distillate of animal matters is capable of inflammation in this way. The *primary distillate*, and *all successive ones*, until the last portions are

reached, constantly refuse to burn as above described, no matter how abundant the empyreumatic substances may be. Some organic acids, as formic and acetic, are inflammable in the state of vapor, but only when pure or nearly so; the greater part, however, of the final distillate of these processes is water, and *acids are not* present, as it is neutral, or *must be made so*, previously to weighing or testing.

3. *The Optical Appearance within the Conducting-Tubes when the Distillate just begins to boil.*—Alcohol comes over in greatest strength in the first moments of distillation, and, if present, may always be seen to play in a mobile manner just in advance of the watery dew-drops, as both progress rapidly along the interior of the conducting-tube. To observe this peculiar play of the successively condensing and vaporizing alcohol, it is essential that the drops of water, previously deposited from the humid air within the interior of the tube, should have been dissipated by a gentle heat from the flame of a lamp; the conducting-tube being allowed to cool again before ebullition. This appearance is of course only to be observed between the balloon and the condenser. It is a trustworthy guide for very minute quantities of alcohol, and should be studied in the distillation of dilute mixtures of alcohol and water. If carefully looked for and not observed, alcohol is hardly present; especially as the terminal distillations of a series are approached. Other volatile substances likewise condense at the first bend of the conducting-tube, but their “play” is entirely different, and they invariably *precedes* the appearance due to alcohol; they are, moreover, often milky, or yellowish, when direct heat has been applied to the organic matter experimented on. It is *not* completely necessary to remark that the purification of the final distillate is *not complete*, so long as this ante-alcoholic “play” is observable.

In order to arrest any possible oxidation of alcohol into acetic acid, in some of his experiments Dr. Ford added sulphuretted hydrogen to the blood as it was drawn.

The results of ten experiments are shown in the following table:—

No.	Weight of Blood.	Interval from Death to 212°.	Temperature when distilled.	Weight of First Distillation.	Weight of Final Distillate.	Weight of Alcohol obtained.	Weight of Alcohol for 10,000 parts of Blood.	With or without H. S.
15	6970	60 m.	.....	.....	.....	0.0650	0.0932	without.
16	9734	56	101°	1602	0.8416	0.0198	0.0203	without.
17	9137	70	100.3°	1636	1.6218	0.0605	0.0662	with.
18	9236	77	99.5	1623	3.6130	0.0444	0.0480	with.
19	8988	60	99	1555	2.6092	0.1357	0.1509	with.
20	8854	60	98	1555	1.7320	0.0760	0.0858	with.
21	9423	45	96	1560	1.8722	0.0706	0.0751	without.
22	9112	61	98	1550	0.9552	0.0350	0.0384	without.
23	27330	48	98	14050	10.6883	0.2928	0.1071	with.
24	36300	51	99	17600	14.0606	0.5652	0.1556	with.

In conclusion, Dr. Ford sums up as follows:—

It has been premised that, even if oxidation were in complete abeyance, not more than *half a part* of alcohol could exist, at any given moment, in ten thousand of pulmonary blood. This statement was based upon the result of a double calculation, whose elements were so different that their common evaluation must be accepted as something *very near the truth*. These two figures I now subjoin, with those exhibiting the results practically obtained in the experiments detailed, all for 10,000 parts, as follows:—

Alcohol in the capillary blood of the lungs:

	{ calculation based on “carbon ingested”	0.5408
	{ “ “ “carbon exhaled”	0.5794
“	putrescent lung-tissue (mean of ex. 8, 9, and 11)	0.3819
“	fresh “ “ “ 12, 13, and 14)	0.3076
“	putrescent thoracic blood (mean of ex. 1, 2, 3, 4, and 5)	0.7625
“	fresh “ (mean of table)	0.0841
“	putrescent liver-tissue (ex. 6)	4.3188
“	fresh “ (mean of ex. 25, 26, and 27)	0.0190

An examination of the above figures will show:—

1. That from putrescent liver-tissue the largest yield was obtained. Much of the alcohol in this case must have been lost by acetification, and partly, no doubt, by transformation into lactic acid and other products.

2. That the least quantity obtained was from fresh liver-tissue. It would appear that the fermentation of hepatic sugar merely *begins* in the hepatic capillaries.

3. That a far greater quantity of alcohol was obtained from blood in a state of incipient putrefaction than from fresh blood—about nine times as much. Under the circumstances of the slaughtering, blood from the inferior cava, laden with sugar, must become mingled with that from the lungs and other great vessels; it may even escape upward through the auricle and superior cava: mixed thoracic blood must, therefore, contain a large quantity of alcohol after *putrefaction* has advanced sufficiently far to cause the fermentation of all its original sugar. On the other hand, as *fresh thoracic blood* cannot be supposed to have traversed the lungs, it must only contain a small proportion of alcohol, for its sugar has *not been yet fermented*; it must likewise have been largely diluted with aortic blood, which, in the *fasting* state especially, contains no sugar, nor alcohol, probably. As the thoracic blood employed in ten of these experiments should be composed of blood from many different vessels, which are divided at random by the knife, it must contain very variable quantities of sugar and alcohol, always, of course, however, *less* than the blood of the inferior cava.

4. That the greatest amount of alcohol obtained from any of the re-

cent substances was recovered from fresh lung-tissue. Lung-tissue newly extracted from the body retains about half its weight of blood, the number indicating alcohol should, therefore, be *doubled*; this would show that about as much alcohol had been actually procured as calculation warrants us to suppose present. Contrary to what we have just stated with regard to fresh and putrescent blood, we find that *fresh lung-tissue* contains nearly as much alcohol as *putrescent lung-tissue*. The figures show that only about *a fifth* of the sugar originally present remained unfermented after seventy-three minutes, when the fresh tissue was distilled; while no greater increase than *this fifth* took place in the seventy-seven hours during which similar tissues were submitted to putrefaction. Fermentation seems thus to be more active in the lungs *immediately after death*, and probably at its *highest term* during life. This deduction receives tangible support from the fact just now stated, viz., that in *fresh thoracic blood*, which the test by decomposition proves to be rich in sugar, *very little alcohol* is to be found; such blood has mostly been derived from the great vessels, and has not yet passed through the lung capillaries; its sugar has not consequently been fermented. Other considerations, in too great variety to mention here, would lead us to conclude that the capillary system in the lungs is the proper seat of the alcoholic fermentation. As this must vary directly as the oxidation of its ferment (fibrine), if the aëration of the blood be impeded or arrested by the action of toxic or medicinal agents, such as woorara, the ethers, chloroform, etc., or by injury to the M. Flourens's "*nodus vitalis*," which paralyzes the pulmonary vaso-motor nerves, and induces pulmonic congestion, sugar becomes so abundant in the circulation as to pass into the urine—the animal becomes glycosuric. Alvaro Reynose has published a very interesting little pamphlet on this point ("*Mémoire sur la Présence du Sucre dans les Urines*," Paris, 1853), in which he seems disposed to accept M. Mialhe's well-known hypothesis of saccharine oxidation in the lungs, in virtue of the alkalinity of the blood. The hypothesis of the alcoholic fermentation of hepatic glucose in the pulmonary capillaries is quite adequate to explain the above phenomena: an animal becomes glycosuric in cases like those alluded to, *not* because glucose cannot be oxidized in the lungs for want of oxygen, but because the alcoholic fermentation is slackened or suspended in consequence of the failure or deficiency of the oxidation of its proper ferment; the constant oxidation of its ferment being a law of this fermentation, as already explained.

5. That if, as before, we consider the lung-tissue operated on as containing one-half its weight of capillary blood, by *doubling* the alcoholic ratio, we have, for the *capillary blood of putrescent lung-tissue* (where we suppose all the sugar to have been converted) the figure $0.7638 =$

(0.3819×2), which is nearly exactly equal to the mean product of purescent thoracic blood, all of whose sugar has likewise been converted.

The general accordance of the results above set forth with theoretical anticipations, and their consistency with each other, strongly tend to substantiate the truth of the hypothesis under which the whole experimental series was conducted, as well as to establish the *high degree of accuracy of the methods employed*.

ACTION OF CHLOROFORM.

IN the New York *Medical Journal* for June, Dr. Robert Amory states that from a number of unpublished experiments he has arrived at the following conclusions:—

1. The elective action of chloroform for the cerebro-spinal system, upheld by MM. Lallemand, Perrin, and Duroy, by Dr. Anstie, and by others, is not yet proved. The experiments undertaken to disprove this theory, by Gosselin, by Snow, and by Richardson, seem to show, that if the brain of an animal is moistened with chloroform no anæsthesia follows.

2. The injection of chloroform into arteries or veins of any portion of the body does not cause anæsthesia, unless a sufficient quantity is injected to produce coma or death; the carotid, the femoral, and the branchial arteries were employed in this method of experimentation. No sleep followed, unless coma and death supervened. It was observed that the chloroform was absorbed by the tissues and eliminated by the lungs.

3. Blood was directly transfused from one dog, who was in a complete state of anæsthesia from the inhalation of chloroform, to another who had not inhaled chloroform. Five minutes from the commencement of the transfusion, chloroform was exhaled from the lungs of the second dog, though it could not be perceived before. The transfusion was continued without interruption for from fifteen to twenty minutes, beyond which time clots were formed in the tube, so as to interfere with the continuation of the experiment. This experiment was repeated several times with the same result. There was not the slightest appearance of abolition of pain, nor any attempt to sleep, on the part of the second dog. The transfusions were conducted from femoral to femoral artery, or from carotid to carotid.

4. Unless the blood is surcharged with chloroform, the vapor of which may most easily be absorbed in the lung-tissue, no sleep or anæsthesia will follow the administration of chloroform. I am well

aware that there are some cases in which large doses of chloroform have been swallowed, followed by a comatose condition of the patient; the effects in these cases were not always anæsthetic nor hypnotic, but were in a great measure due to a probable congestion in the nervous centres.

5. The physiological action of chloroform is due to the interference with the process of oxidation of tissue, produced by altering the physical condition of the blood-corpuscles, and rendering them incapable of carrying sufficient oxygen through the tissues.

UREDIO MAIDIS IN PSORIASIS.

PROF. GAMBRINI reports, *Rivista Clinica di Bologna* for March, 1872, a case of psoriasis treated with Indian corn fungus (*Uredo Maidis*?). All other means had been exhausted in the case. The treatment extended over a period of three months. It began by the administration of six grammes of the tincture in sixty grammes of distilled water, to be taken in two or three doses. The number of grammes administered daily was increased gradually up to eighty. An ointment made of thirty grammes of the tincture to sixty grammes of hog's lard was also used as an application to the affected parts. The following is a *résumé* of the phenomena which accompanied the internal use of the medicine. From the first the patient experienced frequent yawning and eructations. The appetite stood at the normal degree for some days; afterwards it went on gradually increasing. A feeling of heat was experienced in the soles of the feet, and also on the backs of the hands. The urine was colored but did not produce smarting. The patient had a horror of baths generally, but delighted to put her feet and hands in water. She could not bear the weight of her usual bed-clothes. She did not experience any diarrhoea or costiveness. The muscular force at first decreased, but afterwards augmented. The patient became more joyful than her wont. She was naturally of a melancholic temperament. There was no perceptible change in the pulse. When it was found necessary to suspend the employment of the remedy, owing to the patient's disgust at it, it was discovered that the *psoriasis* was not so generally spread over the body; that it was limited to the elbows, knees, along the tibiæ, and very few places on the thighs and arm. The scales, which were at first large and numerous, were reduced to almost nothing, and the *pruritus* had almost disappeared. If the use of the remedy could have been continued there is a probability that the disease might have been entirely conquered; as it was, the result was manifestly favorable. In a second case equally favorable results were obtained.—*Med. and Surgical Reporter*.

RESEARCHES UPON THE PROPERTIES OF THE ACTIVE PRINCIPLES OF OPIUM.

M. RABUTEAU read a paper upon the above subject before the French Academy April 22; an abstract of which is contained in *Revue de Thérap. Méd.-Chir.*, June 15, 1872. He said that Claude-Bernard had shown by his experiments that the chief active principles of opium act differently upon animals. Only three of them, narceine, morphine, and codeine are soporific, and that these in large doses are toxic in diverse degree, and that they all induce convulsions except narceine.

My experiments, some one hundred and fifty in number, have been made upon healthy or sick men, dogs, rabbits, and frogs. I have studied not only the six principal alkaloids of opium, but also meconia and meconic acid, and have administered both hypodermically and by the stomach.

Thebaine.—According to Claude-Bernard this is the most poisonous to animals of all these alkaloids. This is true, but does not apply to man, who can take without danger ten to fifteen centigrammes of muriate of thebaine. I have found that this substance, injected subcutaneously in neuralgia, acted as an anæsthetic like morphia. I have also found that it is wanting in the power of checking intestinal secretion, and that it is not soporific in man.

Papaverin.—This substance is much less active than thebaine; no symptoms are induced by fifteen centigrammes of its muriate administered hypodermically to the rabbit, twenty-five to the dog. On man it is equally inert, and does not act upon the intestinal secretions, but is slightly anæsthetic.

Narcotina.—Following Bernard, narcotina is the least poisonous of the bases in its action on dogs. It is the same in man, as I have taken at a dose forty-three centigrammes of its muriate without effect. It does not check intestinal secretion, nor is it soporific, either in man or animals. It is not, however, absolutely inert, for it causes in very large doses (three centigrammes) slight convulsions in the frog.

Codeine.—This drug is more dangerous than morphia, and less so than thebaine to the animal. It is otherwise in man. In doses of five to ten centigrammes it produces heaviness in the head and weakness of the limbs. It does not arrest intestinal secretion, and is very slightly analgesic or soporific in man.

Narceine.—This is the most soporific of the opium alkaloids to the animal. It is necessary, however, to inject under the skin of a moderate-sized dog five centigrammes to cause deep sleep. It is much less soporific than morphia in man. But in ten to twenty centigramme doses it causes a calm sleep, not so profound and more natural than that

of morphia. Lastly, this precious substance is largely anæsthetic. It diminishes the flow of urine, has much less action on the intestinal secretion than morphia, but as it does not disturb digestion, is useful in the diarrhoea of phthisis.

Morphine.—This is the most active of the alkaloids as regards man, but, according to Cl.-Bernard, the fourth in rank as regards animals.

Meconine and Meconic Acid.—I have shown that meconic acid is inert even in large doses. I have injected fifty centigrammes into the blood of a dog, and have taken one to three grammes of the bimeconates of soda and potash without producing any symptoms. The reaction of the perchloride of iron and meconic acid could always be developed in the urine, which was neutral. Meconine is equally inactive.

The alkaloids of opium might be classed as follows, in order, according to their effects on man:—

Soporifics.—Morphine, narceine, codeine.

Toxics.—Morphine, codeine, thebaine, papaverine, narceine, narcotine.

Analgesics.—Narceine, morphine, thebaine, papaverine, codeine.

Anexosmotics.—Morphine, narceine.

Combined Action of Alkaloids of Opium and Chloroform or Bromoform.—It is known that the combined action of morphine and chloroform is analgesic without of necessity sleep being induced.

A dog which had received, under the skin, five centigrammes of muriate of narceine, and then been put to sleep with chloroform, felt nothing after he awoke. Pinching, sticking, or even treading on his feet caused no indications of pain, and yet he ran about the laboratory. This curious condition lasted for many hours, during which the sensitive nervous system was, as it were, abolished. I have seen the same results in using bromoform or chloral in the same way, and the other alkaloids of opium, except narcotina, in diverse degree.

At the séance of the French Academy, May 13, M. Bouchert read a paper "On the opium alkaloids in regard to their action on children and adults." His conclusions were:—

First—That the alkaloids of opium may be divided in two groups, those which are soporific, and those which are inert.

Second—The alkaloids of the first class differ in activity, and in as large a dose as can be safely administered have no convulsant action, but are toxic when taken in sufficient quantity.

Third—Morphia, with its salts, is the most active of all the opium alkaloids.

Fourth—Codeia comes next to morphia as a soporific and anæsthetic, but it only is one-third as strong as the last alkaloid.

Fifth—Narceine comes next to codeia, but may be taken in large doses without much effect.

Sixth—Papaverine has no effect in doses of one gramme by the stomach, or ten centigrammes hypodermically.

Seventh—Neither narcotine, nor thebaine produces any symptoms in doses of fifty centigrammes.

Eighth—Meconine causes no appreciable effect in doses of thirty to fifty centigrammes.

Ninth—Opianic acid is inert.

Tenth—Morphia and codeia are the only opium alkaloids of therapeutic value.

TREATMENT OF SPERMATORRHEA.

THE occasional introduction of a catheter as large as the urethra will take, is often of the greatest service; it should be passed into the bladder and allowed to remain for five or ten minutes, according to the tolerance of the patient; its mechanical pressure helps to unload the congested capillaries and small vessels of the urethra; its contact deadens and destroys the extreme sensibility of the urethral nerves, and renders them less susceptible to the influence of slight excitants; whilst, by stimulating the muscles, it provokes their contraction, and so renders material assistance in emptying the larger veins. A silver catheter is the best instrument for the purpose, as it exerts firmer pressure than an elastic bougie; and, as the urine can be drawn off through it, the patient will not require to micturate for several hours, which is a point of some importance, as the urethra is often very tender after the passage of an instrument for the first few times. The frequency with which it should be employed depends upon the amount of discomfort its presence occasions; and, if the pain be great, it should not be left in more than a few seconds, lest rigors, swelled testicle, etc., be occasioned. Sometimes the urethra is *extremely* sensitive, and much pain attends the use of the catheter; but this is an additional reason for persisting with it, though a smaller one may be employed at first, so as to cause less pain. I have sometimes found that smearing the catheter with blue or calomel ointment, or with half a grain to a grain of nitrate of silver rubbed down in an ounce of lard, to be of use in obstinate cases; but I prefer the blue ointment to anything I have yet tried. Some camphor, extract of opium, belladonna, etc., may be combined with these ointments, if thought desirable. Care should be taken that these applications do not reach much beyond the curve of the instrument, and it should be thoroughly oiled before using it. The

oversecretion of mucus is always checked by the use of the catheter, whether armed with ointment or not.

Cold bathing, cold douches, etc., should not be employed on going to bed. The ordinary bath in the morning does good; but cold applications at night should be forbidden, as the reaction which follows them will increase the local circulation, and so cause congestion and erection of the penis, and thus increase the probability of emissions.

Not only must the position assumed in sleep be attended to, but undue warmth in bed avoided, whether by using very soft beds or too large an amount of clothing. The bowels should be carefully regulated, to prevent any accumulation within the rectum; and the urine examined from time to time, so as to detect an excess of uric acid, the presence of oxalates, etc., which may render its passage irritating to the hypersensitive urethra. Overdistention of the bladder must, at all times, be guarded against, and the patient warned to pass urine on waking in the morning, lest he doze off again with a full bladder, which is one of the most certain provocations of erection and emissions.

Before commencing to treat this affection constitutionally, it is generally necessary to allay the digestive disturbances, which are so common and often so severe, by giving such remedies as may be applicable to the condition of the patient either with or without the more special medicines. By neglecting to do so, we may not only add to the dyspeptic troubles and obtain no benefit from the drugs given, but a valuable medicine may do harm and be brought into disrepute, in consequence of its being administered at a time when the stomach cannot tolerate it.

Internally, I have found astringents of more use in this disorder than tonics; or they may be combined. Gallic acid, the dilute mineral acids, especially the sulphuric, may be given. Tincture of matico will often be of service, and more so, in my experience, than any other plant rich in tannin, as it appears to act upon the genito-urinary tract rather than upon the bowels, as is often the case with the others.

Ergot is one of the most valuable remedies for this affection, and the liquid extracts of the *Pharmacopœia* is a very efficient and convenient form for giving it; whilst the dilute sulphuric acid can be added, if thought advisable.

When the urethra is very sensitive, and the passage of urine painful, small doses of copaiba are often most comforting; or the other oleoreins may be tried if it disagree; but none of them, in my opinion, is equal in value to copaiba when it can be borne.

I am not disposed to regard strychnine in these cases with very great favor; when there is much irritability of the nerves, I believe it often

adds to this ; but when this is subsiding it may be of use as a tonic ; so may quinine or iron, but in no other way. I have never given the tincture of iron in the enormous doses (from one to two drachms three times daily) recommended by some, and so I cannot speak personally of its value in such large quantity.

Cantharides, phosphorus (except the dilute phosphoric acid), and the so-called aphrodisiacs, do harm by acting as stimulants to the nervous system generally, and therefore to the local nerves. Cantharides, also, by its action upon the bladder is, especially when given in large doses, a very injurious drug in these cases. For the same reason I disapprove of local blistering ; while the sore left by the blister acts, moreover, as a source of irritation, and adds to the liability of emissions.

Belladonna, in my hands, has proved to be an uncertain remedy ; in some cases it has appeared to do good by allaying irritation, whilst in others there were no beneficial results from it. The dryness of the throat, disturbance of vision and diarrhoea, which are often caused by it, constitute an objection to its employment in full doses, and without them its value is very questionable.

Camphor is a most useful drug ; three or four grains made up into two pills, with half a grain or a grain of opium, and one or two of aloes, have more frequently allayed irritability and prevented emissions than anything I have yet tried. Opium alone does not succeed as well, and a large dose is necessary, so that the untoward symptoms sometimes produced by it are more likely to be incurred.

I have tried chloral in a few cases, and with very great advantage ; in doses of fifteen or twenty grains at bed-time it has answered its purpose admirably.

Bromide of potassium, in thirty or forty grain doses, will sometimes be of service ; but it seems to me a less certain remedy than chloral, which I am disposed to regard as one of the valuable agents we possess for these cases, though as yet my experience of it is limited.

Suppositories vary much in their action, whatever drugs they may contain. Occasionally they answer well, but often they do not lessen, and I am not sure they do not sometimes increase, the irritability of the parts.

Galvanism I have not employed myself ; but in the few instances where I have known of its being tried by others, it has seemed to me to do more harm than good, by adding to the nervous irritation.

Lastly, as to cauterization by the *porte-caustique*, I need scarcely say that I am strongly opposed to this method of treatment ; for, if my view of this disorder be correct, this instrument can relieve it in no other way than as the passage of the catheter does. I do not believe that ulceration or other morbid conditions of the ejaculatory ducts are the

causes of seminal losses. We have no evidence that these pathological conditions exist, except, it may be, in very rare instances; and if so, the application of nitrate of silver to the prostatic mucous membrane in every case of nocturnal emission must be unnecessary; and in spite of its alleged harmlessness, I consider it to be a dangerous treatment. I have known two persons die from the effects of the *porte-caustique*, and I have seen others suffer severely from its employment. This may not be the usual result; but I do say that the application of nitrate of silver to the urethra, whether in stick or in strong solution, is at least a very sharp remedy, and will often produce violent inflammation, and sometimes lay the foundation of a stricture or of a chronic irritation of the bladder.

If, then, caustic be applied on an incorrect surmise as to the condition of, and its effects upon, the prostatic mucous membrane and ejaculatory ducts, it is not only an unnecessary, but, in my opinion, an unsafe method of treatment.—*Gascoyne—British Med. Journal.*

CHLORAL.

In the *New York Med. Journal* of June, 1872, is a very able paper by Dr. Robt. Amory, of Boston, which goes far to establish the fact, that chloral acts as chloral, not as chloroform in the system.

He first details a number of carefully conducted experiments, and then comments on them as follows:—

From the above experiments it will be seen that it is not possible to obtain decomposition of chloral into chloroform when the former is mixed with warm, fresh blood, and it is hardly probable that this decomposition occurs in the organism. The decomposition does not occur if the solution of chloral is separated from the blood by a membranous substance such as a sheep's bladder. If, on the contrary, the blood is made strongly alkaline by the addition of caustic soda, the decomposition suggested, but never proved, so far as the author of this article can determine, by Liebreich, Richardson, and others, does take place.

Dr. Amory's next set of experiments are directed to disproving the presence of chloroform in the blood of animals poisoned with chloral hydrate. In these he succeeded in obtaining chloral from the blood and from the air exhaled from the lungs of such animals, but failed to find a trace of chloroform.

The next experiments proved that the blood of an animal poisoned by chloral does not show the presence of chloroform; while that of an animal poisoned by chloroform does show very distinctly the presence of chloroform.

The next step was to disprove the elimination of chloroform from animals poisoned by chloral. The result was in all cases negative, but if chloroform was at any time administered alone or with the chloral, it could be very shortly found in the breath.

The experimental conclusions of this paper are certainly in accord with every-day clinical teaching, that chloral does not act like chloroform, and that the doses of the two substances are not proportionately the same.

HYDRATE OF CHLORAL IN TRAUMATIC TETANUS.

DR. JOS. R. BECK reports (*St. Louis Med. and Surg. Jour.*, June 18th, 1872), a successful case of traumatic tetanus treated by chloral hydrate. He discusses at some length the evidence so far adduced in favor of the drug, and gives the following table as a summary.

NO.	REPORTED BY	MODE OF TREATMENT.	Whole No.	Died.	Recovered.
1	W. B. Cluness	Chloral alone	1		1
2	M. Verneuil	Chloral alone	1		1
3	{ MM. Dubreuil, Lavaux, and Onimus	Chloral and continuous cur- rent	2		2
4					
5	Dr. Dufour	Chloral alone	1		1
6	M. Guyon	Chloral alone	1	1	
7	M. La Fort	Chloral alone	1	1	
8	Mr. Tay	Chloral alone	1	1	
9	E. R. Denton	Chloral, belladonna, and potas. bromid.	1		1
10	Thos. G. Duncan	Chloral and Calabar bean	1		1
11	Preston Peter	Chloral and Calabar bean	1	1	
12	John W. Ogle	Chloral, belladonna, and ice to spine	1		1
13	Mr. Croft	Chloral alone	1		1
14	Mr. Paget	Chloral alone	1	1	
15	J. Suydam Knox	Chloral alone	1		1
16	{ C. Macnamara	Chloral alone	7	6	1
to					
22					
23	{ M. Garnies	Chloral alone	2		2
24					
25	{ Dr. Widerhofer	Chloral alone	10	4	6
to					
34					
35	F. Auchenthaler	Chloral alone	1		1
36	My own case	Chloral alone	1		1
TOTALS.			36	15	21

Chloral in Traumatic Tetanus.—Dr. Lavo relates (*Annali Universali di Med.*, Feb.) three cases of severe traumatic tetanus which

were successfully treated by means of chloral aided by the employment of the cold bath. The quantity of chloral used during the course of the first case amounted to 240 grammes, with twenty-five baths; in the second to 147 grammes, with fifteen baths; and in the third to 140 grammes, with eleven baths.—*Med. Times and Gaz.*, March 30, 1872.

BROMAL HYDRATE.

In the *Journ. de Bruxelles*, April, 1871, Berti and Namias arrive at the following conclusions as the results of an experimental study of Bromal hydrate.

First—Even in small doses, administered in weak solution, it causes burning in the throat, pyrosis, vomiting, and diarrhoea.

Second—In emulsion (1 : 300) it is most endurable, but yet after a time, if repeated, produces vomiting and purging.

Third—Even in relatively large doses it does not produce sleep or quietude. In epilepsy it is of but very little use.

Fourth—Subcutaneous injections cause abscesses and exert no perceptible influence on the nervous system.

Fifth—Rubbed up with a fat and applied to the skin it produces an erythema which is accompanied by a deep inflammation of the cellular tissue.

Sixth—As a caustic it has no advantages over those in common use.

Seventh—Toxic doses produce stupor, paresis of sensation and motion, and rapid or gradual cessation of respiratory movements.—*Schmidt's Jahrbücher*, April 18th, 1872.

MONOBROMATE OF CAMPHOR IN DELIRIUM TREMENS.

DR. ALLAN McLEAN HAMILTON, after detailing various treatments he had resorted to to overcome obstinate wakefulness in a case of delirium tremens, says :—

R. Camphoræ monobromat., ʒ i. ; confectio rosæ, q. s. M. ft. massa and divide in pil. No. xij. One pill was given at 12 o'clock, and within a half-hour the patient fell asleep, and slept soundly till the next afternoon, when he awoke refreshed, and drank some beef-tea and milk. At 12 o'clock the same night he took another pill, and slept till 3 o'clock A.M., when another was administered. From this medicine he obtained regular sleep, and awoke always bright and refreshed. No bad effects followed, even when he took ten grains. His appetite is restored, and his nervous system seems to have experienced

a complete rest and invigoration. I have tried this remedy in chor-dee, and am convinced it excels any combination of camphor and opium, or any of the usual medicines administered in this complication. The high price will prevent it from being used as freely as some other medicines, as the chemists who manufacture it declare that the combination of the equivalents, camphor and bromide, in nearly every instance is attended by spontaneous ignition.—*New York Med. Journ.*, July, 1872.

Brominated Camphor.—Prof. Deueffe, of Ghent, says (*Presse Méd. Belge*) that he has for more than two years used a combination of camphor and bromine, to which he calls attention. It is known that bromine and camphor unite at ordinary temperatures, but the product is decomposed by exposure. This compound Prof. Swarts, of Ghent, has shown, when heated in a closed vessel, is resolved into hydrobromic acid and a crystalline monobromized camphor, *i. e.*, camphor with one atom of hydrogen replaced by bromine. Its fusing point is 76° C., and its boiling point 274° C.

Prof. Deueffe has prescribed it in the form of pills, seventy grains in thirty pills, of which he gives one every four hours till twenty have been taken; the dose afterwards increased. He finds it an excellent sedative to the nervous system, and has used it with much success in delirium tremens.—*Birmingham Med. Rev.*, April, 1872.

Chloral-Hydrate in Spasmus Glottidis.—[*Jahrbuch für Kinderkrankheiten*, 4. H., 1871.]—Dr. Rehn treated a threatening case of spasm of the glottis, in which the attacks were very severe and frequent, with chloral-hydrate. The attacks were perceptibly lessened and finally quieted. The child thus treated was seven months old. The medicine was well borne, and produced no disturbances of digestion.

Swinging in Phthisis.—The effect of swinging seems to have been observed long ago. George F. Elliot, M. D., states that, in the year 1785, one Dr. Smith, F.R.S., tried the effect of swinging on fourteen consumptive patients, at the Middlesex Hospital. It was practised twice a day, for half an hour at a time. On two of the patients it seemed to have but little effect; in the remainder the pulse fell from eight to fifteen beats per minute. His conclusion is, that "the motion of swinging has often a very sensible and immediate operation on the heart and lungs, as it reduces the frequency of the pulse, lessens febrile heat, suspends or prevents coughing, and promotes expectoration."—*New York Medical*.

ON THE TREATMENT OF ASTHMA.

MR. GEORGE GASKOIN, Surgeon to the British Hospital for Disease of the Skin, says in the *British Medical Journal* :—

In the summer of 1870 I was summoned to a lady suffering from an acute asthma, to frequent attacks of which she was subject. Nothing had been omitted in her previous treatment, which was simply palliative. She was recognized as constitutionally asthmatic, and little hope was entertained of permanent amendment. The asthma first occurred on the subsidence of nervous symptoms a few years previous. It had not, as far as I am aware, any organic basis. There was observable on the legs an eczematous eruption. I directed that the chloroform liniment of the *British Pharmacopæia* should be briskly rubbed into the chest for an hour's space, if possible; and this was done daily by a very efficient attendant, who had sufficient intelligence to comprehend and carry out the treatment. Very early much relief was experienced. On the return of her physician to town at the end of three days she was already so much changed for the better that he directed the treatment to be continued. From that time it consisted in the daily repetition of the rubbing process for a month or nearly so, without aid from medicine, and with little restriction to diet. Beyond the information I received that she was daily improving, I had really little or nothing to do with her professionally after one or two visits. Under the hands of her attendant she speedily got rid of the asthma. The patient went out of town in the autumn and enjoyed perfect health and spirits. She took much walking exercise, with exposure, in the cold of the ensuing winter; and, what is very singular, two years have since elapsed with no return of the asthma.

Before giving directions as to how this treatment should be carried out, I will speak as to the *rationale*. Counter-irritation, especially by blister, issue, and moxa, are of such well-established repute in the treatment of asthma that I need not dwell on them; but, besides this, a jolting vehicle, anything that leads to displacement of the air stagnant in the vesicles, is proved to give relief in many instances. I should advise, then, that the frictions should be made with such roughness as the case admits. Slight blows with the palm of the hand or the end of a towel on the ribs are quite allowable; and the friction should be extended to the front of the neck at the lower part, where the vagi enter the chest. I do not think that the composition of the liniment need trouble us, provided it be warm and work easily. Anything like Roche's embrocation would answer very well.

I am not without some experience of asthma, and I am persuaded that the present method will be found a valuable addition to our thera-

peutic means. If proved not to be novel, it must be conceded that it has fallen into utter neglect.

EXTRAORDINARY TOLERANCE OF LARGE DOSES OF MORPHIA.

DR. R. M. OTIS gives an account, in the *Bost. Med. and Surg. Journ.* (April 11, 1872), of the case of a woman who had used in four years ending Feb. 14, 1872, twenty-four ounces of sulphate of morphia, by hypodermic injection.

In the same journal for March 6, 1873, he states that in the following year there was injected hypodermically, in the same patient, five and three-eighths ounces of the drug.

EXPERIMENTS ON THE PHYSIOLOGICAL ACTION OF GERMAN ACONITE.

BY RUDOLF BÖHM AND L. WARTMANN.

THE authors made a great number of experiments with Merk's aconitia. The general symptoms induced were similar to those seen by previous experimenters. The influence upon special organs, as far as studied, may be arranged under four heads:—

1. The influence upon the nervous system of frogs was studied by the method of Bezold. The result they obtained was, that the nerve-trunks are not affected, but that the paralysis of aconite poisons is central. This result is in opposition to that of Achscharumow's and Weyland's experiments, who shortly after death found that the peripheral nerves could not be excited by the induction current, whilst the muscles could be; also is in opposition to Weyland's delineation of the muscle-curve in aconite poisoning. The ascending portion of the curve goes, according to Weyland, not directly upperwards, but holds itself for a long time after the first third of the line upon a level, and the return of the muscle to its normal position follows very slowly: the more slowly, the more profound the poisoning is. Rudolff and Böhm, however, found that the pen of a modern myographion traced the same curve with a muscle from a poisoned and unpoisoned frog.

The authors appear to think it probable that the central paralysis is due both to a lessening of the sensibility, so that the sensitive cells do not feel the excitation and do not give origin to an impulse to act upon the motor cells, and also to a direct paralyzing influence upon the motor cells themselves. From numerous experiments made in accordance with Türk's method, the authors conclude that the aconite first affects the central organ, diminishing first the reflex capability (*reflexvermögen*) of the sensitive spinal ganglia, and producing a diminution in the activity of the motor ganglia which commences somewhat later, but deepens into entire paralysis. The peripheral nerve and muscle are not at all affected, except a perceptible stimulation of the peripheral intra-muscular nerve endings.

2. *Influence on the Heart.*—According to the earlier experiments of Achscharumow and Böhm, the action of aconite on the heart is to first increase the rapidity of its beat, afterward to slow it, and render it irregular until the viscus stops in diastole. The inhibitory nerves are paralyzed, whilst the excito-motor centres remain excitable; the heart-muscle itself loses its excitability. The experimenters found that the central blood-pressure in rabbits is first heightened, afterwards lessened, as it is throughout in dogs and cats. In all cases is the amount of work done by a single heart-stroke perceptibly increased; the blood pressure finally sinks in the last stages to a minimum; and when small poisonous doses are employed, a paroxysmal influence is perceptible. Achscharumow's theory, that the primary temporary rapidity of the heart's action is due to a vagus stimulation, passing into paralysis, was found not to be true, since the same phenomenon followed the use of the aconite when the vagus had been previously cut; also the same phenomenon was observed in animals previously poisoned with atropia. The authors, under a reference to the recent work of Heidenhain, which throws doubt upon the laming influence of atropia upon the inhibitory action of the vagi, deny that there is in aconite poisoning the so-called arithmetical slowing of the pulse, from the altered blood-pressure acting upon the intra-cardiac inhibitory apparatus. They consider this very probable from the similarity of the curves of Heidenhain and from their own. Besides, the propulsive power of the heart is very distinctly weakened. This circumstance leads to the idea of paralysis of the heart-muscle; but the authors do not believe in this, notwithstanding their own earlier experiments, because very often after the cessation of the ventricular beat in diastole they have seen the auricle continue to pulsate, and because by stimulation of the divided vagus, after already a paralytic influence from the aconite, a marked ascent of the diminished blood-pressure could be seen hand-in-hand with a slowing of the pulse. This increase in ten or twelve experi-

ments disappeared as soon as the irritation of vagi ceased. The authors are not able to give any satisfactory explanation of the action of the aconite upon the heart. When sufficiently large doses of digitalis were given in aconite poisoning the height of the single pulse excursion of the mercury was increased three or four fold, the frequency of the beats being at the same time lessened one-third.

3. *The Influence of Aconitia on the Vaso-motor Centres.*—This was investigated by studying whether irritation of a sensitive nerve induced reflex vaso-motor contraction or not. The latter was found to be the case. This absence of effect might evidently have been due either to a paralysis of the vaso-motor centre or a disturbance of the paths of impulse to the centre. The fact that direct stimulation of the medulla was followed by ascent of the blood-pressure until the last stages of aconite poisoning, showed that it was the latter paths of conduction rather than the vaso-motor centres themselves which were influenced.

4. The influence on the respiration was found to be due to an action upon the spinal centres of the respiratory muscles.—*Schmidt's Jahrbuch.*, August 8, 1872.

ON DOSES.

PROF. E. H. CLARKE has a paper on Doses in a late number of the *Boston Medical and Surgical Journal*. After speaking of the rules of Gaubius and Young (see U. S. D.), he says :—

“Physiological experiment has shown that the weight of animals is not only as important an element in apportioning doses of drugs as age, but is probably a more important one than that. Thus Dr. Fraser, of Edinburgh, in his recent admirable monograph on Physostigmia and Atropia, has shown that the minimum lethal dose of sulphate of physostigmia for rabbits is .04 grain for every pound. M. Claude Bernard has called attention to the fact that in physiological experiments with drugs on animals, the dose should vary with the weight of the animal. Clinical observation shows that men in this respect are not unlike other animals; and that in the administration of remedies the dose should vary with the weight of the patient, in order to obtain the best therapeutical result. Guided by this principle, it is easy to give a rule for doses that is more exact and more easily remembered than the table of Gaubius or the equation of Dr. Young.

“Assuming the average weight of an adult to be one hundred and fifty pounds, for whom an appropriate dose is 1 or one drachm, the dose of most medicines must be increased or diminished in the proportion of the weight of the patient to that number of pounds. This

proportion is represented by a fraction whose numerator is the patient's weight and whose denominator is 150. If a child at birth weighs six pounds, the appropriate dose for it would be $\frac{6}{150}$, or $\frac{1}{25}$; if it weighs ten pounds, $\frac{10}{150}$, or $\frac{1}{15}$. A child two years old, weighing twenty pounds, would require $\frac{20}{150}$, or about $\frac{1}{7}$ of an adult dose; or more precisely, $\frac{1}{7\frac{1}{2}}$, which is exactly half way between the quantity indicated by the table of Gaubius for a child two years old and that indicated by Dr. Young's scheme for the same age. A person whose weight is two hundred pounds should have $\frac{200}{150}$, or $1\frac{1}{3}$ of an average adult dose. A child twelve years old, weighing seventy-five pounds, would require $\frac{75}{150}$, or $\frac{1}{2}$ of an average dose.

"The modifications of the average dose demanded by a patient's idiosyncrasy, disease, and other conditions than age or weight, are not, of course, met by the above rule."

Remarking on the paper of Dr. Clarke, the Editor of the *American Practitioner* says (Nov. 1st):—

"We do not think any scheme for proportionate doses recommends itself for simplicity more than the one proposed by Dr. R. O. Cowling in the first number of the *American Practitioner*: 'The proportionate dose for any age under adult life is represented by the number of the following birthday divided by twenty-five;' i. e., for *one* year is $\frac{2}{25} = \frac{1}{12\frac{1}{2}}$; for *two* years, $\frac{3}{25} = \frac{1}{8\frac{1}{3}}$; for *three* years, $\frac{4}{25} = \frac{1}{6\frac{1}{4}}$; *five* years, $\frac{6}{25} = \frac{1}{4\frac{1}{4}}$; for *eleven* years, $\frac{12}{25} = \frac{1}{2\frac{1}{4}}$, etc. As in the case of Dr. Clarke's rule, we here have a constant denominator; and it will be found on inspection that the quantities more nearly approximate to those given by Gaubius than those obtained by Dr. Young's rule."

Carbazotate of Ammonia to supersede Sulphate of Quinine.

—In a recent communication to the Société de Théraputique de Paris, Dr. Dujardin-Beaumetz investigated the character, properties, and uses of carbazotate of ammonia (combination of ammonia with carbazotic, picric, or trinitrophenic acid), especially as a therapeutic successor to sulphate of quinine. After relating the successful employment of this salt in intermittent fever by Braconnot, Calvert, Aspland, Bell, Chazereau des Thureaux, Manopa, etc., Dr. Beaumetz gave the results of six cases treated by himself, and of various experiments carried on upon animals and man. Like quinine, carbazotate of ammonia diminishes the strength of the pulse, and brings on heaviness, cephalalgia, and even delirium, and is eliminated by the kidneys. These effects have again been stated by Dr. Beaumetz.

Dr. Beaumetz draws the following conclusions from the various facts observed in his six cases, or brought out by his experiments: Carbazotate of ammonia is very efficacious in intermittent fever; the

suppression of the paroxysms may be obtained by the use of two to four centigrammes (one-third to two-thirds of a grain) daily ; given in these doses the drug has never had any bad effects, and seems to be better tolerated than sulphate of quinine ; the physiological action of the substance closely resembles that of sulphate of quinine.—*London Lancet*, October 2.

Chloride of Potassium in Epilepsy (*Echo Méd. et Pharm. Belge*).—Dr. Lander advocates this salt as better than bromide of potassium in epilepsy. He finds it is more active, costs five-sixths less, and has not the inconvenience of the secondary effects of bromide of potassium. He begins with small doses, and has continued the use of the drug for several months without any bad consequences, in daily doses of from 3 grammes 50 to 5 grammes 50 (1 to 2 drachms). Moreover, Dr. Lander thinks that the bromide is converted into a chloride in the stomach, so he suggests the immediate use of the chloride.—*Philad. Med. Times*.

CAFFEINE.

In a recent number of *Pflüger's Archiv* Dr. Aubert describes some researches on this substance. Seeking to ascertain the proportion of caffeine or theine in a cup of coffee or tea, he arrived at numerical results somewhat above those of his predecessors. According to him, a cup of coffee, forming an infusion of 16.75 gr. of dry coffee-grains, contains about 0.1 gr. to 0.12 gr. of caffeine ; and an infusion of 5 gr. to 6 gr. of dry leaves of very good tea contains about 0.1 gr. to 0.12 gr. of caffeine.

He studied the effect of this alkaloid on the nerves, muscles, respiratory movements, heart, and circulation. Caffeine increases the reflex excitability, and may produce tetanus. Dr. Aubert, with most authors, considers this a medullary tetanus ; for it is not produced in the leg of a frog if the ischiatic nerves are cut, and it takes place in a limb the circulation in which has been stopped by a ligature before the subcutaneous injection of the caffeine into the skin of the back. An injection of 0.005 gr. into the skin of a frog, 1.20 gr. into the jugular of a rabbit, 0.200 gr. into the jugular of a dog or cat, produces tetanus. Dr. Aubert did not observe the weakening of excitability of the nerves referred to by Voit and others. According to him, the nervous excitability is altered only in the case of the nerve being plunged directly into a solution of caffeine. The muscular excitability is not affected so long as the caffeine is not applied to the muscles themselves.

Confirming Uspensky's experiments, Dr. Aubert shows that the production of apnoea by means of artificial respiration counteracts the development of the convulsions produced by caffeine,—a phenomenon similar to that which Rosenthal was the first to apply in cases of strychnic tetanus, and which appears to be applicable to all tetanus produced by reflex influence. As to the dose necessary to kill an animal apnoeized, they were various; 3 gr. of caffeine did not kill a dog of 10 kilos. in which artificial respiration was produced. Other dogs in the same conditions succumbed to an injection of 0.25 gr. of caffeine. Caffeine at first produces an increase in frequency of the pulse, but a diminution of its bulk takes place very quickly (one minute after the injection), and sometimes determines the immediate death of the heart. Small doses, 0.1 gr. to 0.15 gr., injected into the skin produce no effect on the heart of a rabbit, while a dose of 0.25 gr. causes an acceleration of the heart and the respiratory movements. The increased rapidity in the heart-beats, and the rise of arterial pressure observed, may be attributed, Dr. Aubert thinks, to a paralysis, more or less complete, of the nerves proceeding from the ganglia to the muscles of the heart, and an excitation of the arresting apparatus of the heart. He does not agree with those who say it is caffeine which gives to coffee its principal qualities. He thinks the reviving action of coffee, which makes it such a favorite beverage, is not yet scientifically explained.—*Lancet*, October.

NEW OPERATION OF THORACIC PARACENTESIS.

DR. T. J. MACLAGAN proposes, in the *British Medical*, the following method of performing thoracic paracentesis:—

In performing the operation, I would simply carry out Mr. Lister's instructions for opening a psoas abscess. A filtered solution of carbolic acid, of the strength of 1 in 100, should be put in the spray-producer, and the spray kept playing around the part at which the opening is to be made. The usual precaution should be taken of first inserting a grooved needle or small trocar and canula, previously dipped in carbolized oil (1 of carbolic acid to 7 of olive oil). The surgeon being satisfied as to the proper part for the incision, a free opening should at once be made into the pleural cavity by means of an ordinary bistoury, also previously dipped in the carbolized oil. The spray, of course, must be kept constantly playing over and around the wound, not only during all this time, but also while the fluid is running away, and must be continued till the dressing is applied. The best dressing is Lister's antiseptic gauze. A strip of this should be cut and folded

so as to form a square of six or eight inches; eight, twelve, or sixteen layers may be used, according to the amount of anticipated discharge; this should be applied over the wound as soon as the fluid is all away; until it is applied there should be no intermission in the play of the spray around the wound. If it be considered desirable to wipe the side before applying the dressing, this should be done with a cloth dipped in a solution of carbolic acid twice the strength of that used for the spray. A piece of some waterproof material should be applied over the gauze, and the whole fastened round the chest. The dressing should be changed on the following day, and afterwards every second, third, or fourth day, according to the amount of discharge. If it be desired to keep the wound open, this may be done by inserting a bit of the antiseptic gauze between its edges. The spray must always be kept playing on and around the wound while the dressing is being changed.

The chief advantages of the above mode of treatment are: (1) that the withdrawal of the fluid is effected more speedily and efficaciously than by any other mode; (2) that there is no trouble, either to physician or patient, with drainage-tubes or other inconvenience; (3) that the entrance of air, with whatever germs or other ingredients it may happen to contain, is efficiently guarded against; and (4) that the patient need not be confined to bed, but may even take open-air exercise before the wound is closed (if his general state permit it) without interfering with the efficacy of the treatment. In some cases this last recommendation is one of great importance.

ON THE PHYSIOLOGICAL ACTION OF ALCOHOL.

BY DR. VICTOR SUBBOTIN.

THE question what alteration alcohol, after its ingestion, undergoes in the body is not yet fully answered. Magendie first showed that one hour after it was taken alcohol could be distilled from the blood, and other observers found it in other tissues or fluids, thus in the gall (Klencke, Percy); Wöhler, on the other hand, as well as Royer-Collard and Bouchardat, could not find it in the urine. Vierordt, and afterwards Becker, observed a lessening in the excretion of carbonic acid, and the latter an absolute decrease in the urea. According to Duchek, the alcohol is changed in the blood into aldehyde, which is burnt more readily than the sugar, which it saves and allows to be converted into fat. According to Buchheim, Masing, Setschenow, &c., this is not the case, for they found unaltered alcohol in the blood, in the expired air, and also in the urine of animals poisoned with alcohol. Also,

Lallemand, Perrin, and Duroy came to the same conclusion—that the alcohol exists as such in the body, is excreted as such, and does not undergo oxidation within the body. On the other hand, Thénard asserts that the alcohol is almost entirely consumed in the body by oxidation.

The method of establishing the presence of alcohol employed by Dr. Subbotin consisted in the conversion of it into acetic acid by chromic acid. Sometimes he used the pure chromic acid, sometimes a proportional mixture of bichromate of potash and sulphuric acid. He mixed first the chrome salt or the chromic acid with the liquid to be tested, and then added the sulphuric acid much diluted, closed the vessel, and kept the whole warm for 24 hours.

The acetic acid was then obtained by distillation and its amount estimated by the use of a soda solution.

The experiments were made by Dr. Subbotin, on the principle of Pettenkofer's breathing apparatus. The diluted alcohol (20 per cent. of absolute) was thrown into the stomach of an animal through the opened œsophagus in quantities of 5 to 10 to 15 cubic centimetres. The expired air was first drawn through an absorption apparatus as follows:—

The air was first passed through a vessel full of distilled water, and then through a series of pipes filled with glass pearls, the first of the pipes containing chromic acid solution and the last two a strong solution of caustic soda. The first pipe was, during the experiments, warmed by means of a water bath.

Experiments on rabbits gave the following results:—

1. Already in the first five hours after the ingestion of the alcohol a not inconsiderable quantity of it was excreted by lungs, skin, and kidneys.

2. Through the skin and lungs at least twice as much alcohol was separated as through the kidneys, in opposition to the assertions of Lallemand, Perrin, and Duroy.

3. The amount of alcohol obtained is only a fraction of what is really excreted, because so much is lost in various ways [These are enumerated, but for them we refer the reader to the original paper.—Ed.], and because, further, the experiments only last some five or six hours, whereas excretion is lively even after twenty-four hours, if the dose has been large.

Dr. Subbotin then made, periodically, frequently repeated experiments, carried on until the excretion had ceased or nearly so, and came to the conclusion that, in the twenty-four hours after the ingestion of the alcohol, at least sixteen per cent. of it is excreted unchanged (or as aldehyde).

Although Dr. Subbotin has found a larger proportion of the alcohol excreted than was to have been expected, yet this does not prove that a portion of it is not used up in the system, nor does the absence of acetic acid in the blood disprove the oxidation of the alcohol, for the acid itself may be oxidized into carbonic acid and water at the moment of its formation.

The admission of the partial oxidation of alcohol, Dr. Subbotin thinks, does not show that it is really a food, for it lowers the tissue changes, as shown by the decrease of temperature and of the elimination of carbonic acid and urea; it is rather to be looked upon as a stimulant (Reizmittel).—*Schmidt's Jahrbücher*, August, 1872.

ON THE EXISTENCE OF PHENOL IN THE BODY OF ANIMALS, AND ITS INFLUENCE ON BLOOD AND NERVE.

UNDER this title Dr. F. Hoppe-Seyler has a paper of interest in *Pflüger's Archives*, for April, 1872, from which we translate the following abstract:—

Hoppe-Seyler first gives the somewhat contradictory testimony of Städeler, Buliginsky, Lieben, and Landolt, showing that the bulk of the evidence is in favor of the existence of carbolic acid, or something from which it is readily derived in urine, and states that his own experiments are strongly in favor of such existence. He says, however, that if a liquid be evaporated to a sirup, and then on distillation, after the addition of dilute sulphuric acid, yield phenol, no one can affirm, certainly, that the first liquid contained carbolic acid or one of its salts. This happens with cow and horse urine, as well as with canine and human urine; the difference being that the yield of the first two is large, that of the last two very small. This is precisely the proportion in which the urines contain hippuric acid and indican. That hippuric acid has no direct relation with the phenol obtained, Hoppe-Seyler considers settled. But it is otherwise as regards indican, and the author is inclined to believe that the phenol is actually derived from the indican.

Hoppe-Seyler also studied carefully the blood of cows and dogs, cow's gall, the liver and brain of dogs, in the method used in the case of the urine, with always negative results. It is well known that these substances contain no indican.

The author, then, taking advantage of Landolt's test (shaking the suspected liquid with an excess of bromine water, and allowing it to stand, when a precipitate containing the phenol collects), traced the

phenol in poisoned dogs. These animals were fastened on their back, and their bellies painted with a strong solution of carbolic acid, care being taken that the breast, throat and head should not be touched. After a few minutes the appearance of characteristic tremblings and spasms marked the commencement of the poisoning. The temperature in the rectum was not altered even when the animal could no longer stand on his feet; but at last it sank. The heart and respiratory movements were greatly affected by the continuous muscular spasms, and the respiration became feeble and irregular.

The arterial pressure experienced at first, when the spasms began, a marked increase, afterwards it fell, and for a long time steadily remained below normal; thus 115 mm., 151 mm., 99 mm., represent the three noted stages. The blood pressure in the jugulars, Hoppe-Seyler believes, though he did not experimentally determine, to be increased steadily. No chemical alteration was perceptible in the blood; its coagulability and the form and color of the red disks were not perceptibly altered.

The muscles preserved their excitability even after death. The death was a slow one, with gradual failure of respiration and circulation, and also gradual fall of temperature. Artificial respiration seemed to prolong life.

Chemical examination after death, in two experiments, yielded the results expressed in the following table:—

	EXPERIMENT 1.	EXPERIMENT 2.
	Per cent. of carbolic acid.	Per cent. of carbolic acid.
Blood.....	0.00128	0.00364
Brain.....	0.00325	0.00346
Liver.....		0.00125
Kidneys.....		0.00423

Two cases of human poisoning from external use have come under the notice of our author.

Two men, for the relief of scabies, very freely rubbed one another simultaneously with a very strong solution of carbolic acid. Suddenly one of the men exclaimed, "I am drunk," and the other cried out on account of the local pain. Their mother, being alarmed by the cries, ran to her sons, whom she found holding fast to some furniture, totally unconscious: one of them she held in her arms, whilst the bystanders freely rubbed him with water on the head and breast; he did not speak and in a very short time died. The other man was laid on the bed, coffee administered, and shortly afterwards he regained consciousness. He stated

the first sensation, after the application, was a feeling of tension in the head, then came giddiness, and then he lost all consciousness.

At the post-mortem, in both ventricles dark watery blood was found, and the muscular rigidity was very marked.

In *Pflüger's Archives* for May, P. C. Plugge has an elaborate article on the value of carbolic acid as an anæsthetic, which, although a valuable exponent of the present state of our knowledge, contains very little new matter.

UPON THE PHYSIOLOGICAL ACTION OF TRICHLOR-HYDRIDE.

BY A. ROMINSKY.

By the experiments of the last decade it has been shown that many innocent hydrocarbons become changed by the entrance into them of an atom of chlorine into powerfully anæsthetic bodies. The following examples prove this:—

		Bolling Point.	
CH ₄	Marsh gas.....	Gas.	Without effect.*
CH ₃ Cl	Chloride of methylene.....	Gas.	Slightly anæsthetic.
CH ₂ Cl ₂	Bichloride of methylene.....	80.5° C	Anæsthetic.
CHCl ₃	Chloroform.....	62°	"
C ₂ Cl ₄	Liquid protochloride of carbon.....	78°	"
C ₂ H ₆	Hyduret of ethyl.....	Gas	Not studied.
C ₂ H ₅ Cl	Muriatic ether.....	11°	Anæsthetic.
C ₂ H ₄ Cl ₂	Æthyl bichloride (Liq. Holland.).....	64°	"
C ₂ H ₃ Cl ₃	Æthyliden chloride.....	75°	Not studied.
C ₂ H ₂ Cl ₄	Acetyl chloride.....	102°	"
C ₂ HCl ₃	Æther anæstheticus arani.....	140°	Anæsthetic.
C ₂ Cl ₆	Solid chloride of carbon.....	182°	Not studied.
C ₂ H ₂ O	Aldehyde.....	21°	Slightly anæsthetic.
C ₂ HCl ₃ O + H ₂ O	Chloral hydrate.....	—	Anæsthetic.

The great difference between the chloral hydrate and the remaining anæsthetics is not really so great as it appears, but is owing to its being the only one soluble in water. The continuance of its action, like that of alcohol, is owing to its physical qualities, which allow it to remain for a long time in the system. The intensity of its action apparently depends upon the large amount of chlorine it contains, for the anæsthetic properties appear to be somewhat proportional to the amount of that element present.

Dr. Rominsky was determined by these facts to undertake the investigation of some still unstudied chlorine derivatives of the fatty group. The first of these which he has studied is trichlorohydrate, a glycerine

* References to the original authorities are given by Dr. Rominsky.

which has become converted into a trichloride of propylhydride ($C_3H_5Cl_3$) by the substitution of three atoms of chlorine.

The first experiments were with frogs. A drop of the substance in the mouth caused in 15 minutes great weakness of voluntary and reflex movements. The animal lay motionless on his back, and after a short time the most powerful irritations failed to develop any reflex actions. The heart's beats were 12 per minute. This condition lasted 4 hours, then gradually went off.

Eleven experiments were made with rabbits. In rabbits of middle size 0.5 grm. in very large ones, 1 grm. given by the mouth, caused sleep in 5 minutes, with great lessening of reflex excitability, which in 3 cases was totally abolished. The breathing remained regular and deep; in the worst cases it was slowed from 90 to 48 per minute. The heart's beat was rendered more rapid, from 240 to 360 per minute. The sleep continued from 10 minutes to many hours, and was followed by perfect recovery. There was always marked enlargement of the vessels of the ear directly after the administration of the drug, followed by decided contraction. The rectal temperature sank in all the experiments $3^{\circ}C$.

In the only experiment in which the blood pressure was studied there was a marked rise, followed, after some vibrations, by a sinking of the mercury. During the two hours of sleep there was a regular vibration of the pressure (the period was about one minute, the amount of vibration 40 mm. Hg.).

Dr. Rominsky has tried the drug on man also. On four neuralgic patients the doses of 0.5—1 grm. produced comparative ease, and in one case sleep for 10 minutes. Larger doses caused vomiting. The pulse frequently fell 8—12 beats, the temperature from $0.90-0.30^{\circ}$. In all cases there was vomiting, beginning 4 to 7 hours after the administration. The Doctor himself took 2 grammes in capsule; after 15 minutes there was great sleepiness, headache, and feeling of heat in the face, which continued two hours. Seven hours afterwards severe vomiting came on, lasting two days, and followed by a catarrhal gastritis.

Dr. Rominsky has tried also dichlorhydride, which physiologically resembles trichlorhydride, but is still more irritant to the stomach.

Trichlorbenzol and chloranil he has found to be without action.—*Pföger's Archives*, May, 1872.

FEEDING BY THE RECTUM.

THE feeding of patients by nutritive enemata in cases of stricture of the oesophagus or pylorus, or whenever the upper part of the digestive

tube must be relieved of its functions, has hitherto been anything but a satisfactory procedure. The ordinary fluid food which is generally used for that purpose is either not retained long enough in the rectum, or cannot be digested there for want of a digestive ferment. Even the proposal of Meissner, to use an artificially prepared meat-peptone, has not always been found practicable, and the long time necessary for its preparation makes it quite unsuitable for daily practice. A decided step in advance has recently been made by Dr. W. O. Leube, of Erlangen (*Deutsches Archiv für Klin. Medic.*, vol. x.). Starting from the idea that it would be best to let the digestive changes which must necessarily precede absorption go on in the rectum itself, with its equable temperature, he devised a mixture of food and digestive ferment which, he found, is easily retained in the rectum from twelve to thirty-six hours. The digestive ferment is the fresh pancreas of the ox or pig, which, finely minced, he mixed with scraped meat, rubbing them well together with a little warm water, so that the mass may be easily injected. The most suitable proportion is one part of pancreas to three of meat. Fat may be added, but its quantity ought not to exceed one-sixth of that of the meat. Before this food is injected, the rectum ought to be washed out with water. Dr. Leube mentions that the first enemata sometimes apparently remain undigested, but that this must not prevent their being continued. Generally the fæces resulting when this food has been retained sufficiently long have the character of ordinary fæcal matter. By a series of experiments, Dr. Leube has proved that by this method of feeding *per rectum* a considerable quantity of nitrogen is taken up into the system. In a dog, which for several days had been deprived of nitrogenous food, and whose system, therefore, was in a state of nitrogen-hunger, an increase in the nitrogen elimination by the kidneys took place when these nutritive enemata were given; and, on the other hand, in several experiments on a dog, and likewise on a healthy young man whose system was in a state of satiation with regard to nitrogen, the quantity of nitrogen excreted through the kidneys was not materially diminished when most of the nitrogenous food was introduced by the rectum instead of the stomach. A chemical examination of the fæces remaining when the food had been retained long enough showed that almost the entire quantity of nitrogen contained in the food had disappeared. The same was found with regard to fat; and in a dog that was killed on the second day of the experiment, the epithelial cells of the mucous membrane of the colon were found filled with fat globules. Dr. Leube also relates three cases of patients in whom this method of feeding had been used, and has completely answered the expectations which had been formed from his experiments. Of particular interest is the last case, in which, in con-

sequence of tincture of iodine having been accidentally swallowed, no food whatever could be taken by the stomach, and the feeding by the rectum had to be continued for more than four weeks. In all three cases the general condition of the patients was much improved, although the nature of the cases precluded any but temporary benefit, two of the patients suffering from carcinoma.—*Brit. Med. Journ.*, July 6, 1872.

Since the publication of the above paper by Dr. Leube the *Centralblatt für Med. Wissen'sft* of July 20th contains another article from him on the same subject, in which he says, that in the warmth of summer the pancreas begins very soon to undergo decomposition, and in consequence loses its digestive power and becomes irritating to the intestine, producing rapid expulsion of the material injected. These mishaps may easily be avoided by making a glycerine extract of the pancreas. This extract is quite equal in digestive power to the fresh pancreas, and will remain good for several weeks. The following is the manner of preparing this extract in glycerine. The pancreas of a bullock (which is sufficient for three enemata) is finely chopped and rubbed with 250 *grammes* of glycerine; and to each third of this, when about to be used, are added from 120 to 150 *grammes* of finely divided meat. It is important that this mass should be injected into the intestine as soon as it is made; for if it is allowed to stand, the meat swells and the operation is thereby rendered difficult.—*Med. Rec.*, New York.

TREATMENT OF PSORIASIS WITH ACETIC ACID.

BY DR. BUCK.

THE exact method of making this application is as follows: First, the superficial scales are to be removed by the aid of frictions with soft soap and warm water, after which different portions of the diseased skin are to be attacked by the acetic acid, which is to be painted on by means of a small camel's-hair brush. The extent of skin which can be daily treated in this manner will depend very much upon the susceptibility of the patient to the action of the remedy, his ability and willingness to endure the consequent smarting, which would appear to be by no means inconsiderable. As the patient becomes more tolerant of this caustic, the applications may be made more frequently, and a larger area may be painted at one sitting. As the result of the application of this agent the tissue becomes white and puffs out, while the surrounding skin becomes red and inflamed, all of which is attended by a moderately severe smarting, which usually subsides in the course of fifteen minutes. The layers of epidermis, which at first are rendered softer, soon dry up and assume the character of thin, horny scales, which in a few days either fall off

of themselves or are readily detached, after which the application of the acid is to be renewed. If the smarting continue for any length of time, or if a severe irritation of the surrounding tissue be produced, as indicated by extensive swelling and redness, the treatment is to be suspended for the time being, and some soothing application, such as lead wash, is to be made to the irritated tissue. The acid may be applied in this manner from one to three times daily, as the patient may wish, until the red, indurated, and thickened tissue is entirely removed, and its space supplied by a smooth soft skin of the natural color. No eschar remains upon the affected spot. In cases of long standing a dark-colored pigment may somewhat discolor the skin for a time, but even this disappears after a while, which, in cases where the psoriasis has had its seat upon the face, is a matter of no little importance to the sufferer. Upon the healthy tissue the acetic acid exerts little or no effect, acting merely as a rubefacient. The time required for the accomplishment of a thorough cure varies from four to eight weeks, depending upon the degree of vigor and persistency with which the treatment is applied, and also upon whether the eruption is of long or short duration.

Regarding psoriasis as a strictly local affection, Dr. Buck has invariably discarded the use of any internal remedies, such as arsenic, carbolic acid, etc., and the results of his external treatment above described seemed to have been attended with uniform success. One case is reported of a young lady, aged thirty, whose body was almost entirely covered with diseased patches (*psoriasis universalis*), varying in size from a split pea to the palm of the hand, whose cure was effected inside of eight weeks. In *psoriasis syphilitica*, which is not strictly included under the same head, the ordinary anti-syphilitic remedies are of course indicated. The acetic-acid treatment appears to have been pretty thoroughly tested for a number of years by Dr. Buck in his hospital wards, and he confidently recommends it to general practitioners, maintaining that it can be carried out *tuto*, if not both *cito et jucunde*. To those whose appetites have often succumbed in vain to nauseating doses of arsenic, so empirically prescribed by the English school of dermatologists, the announcement of this new and simple method of cure will be particularly gratifying.—*Berlin Med. Wochenschrift*; *Boston Med. and Surg. Journal*.

MURIATE OF AMMONIA IN CHRONIC LIVER DISEASES.

DR. W. STEWART reasserts, in the *Indian Med. Gaz.* of August 1, the great value of muriate of ammonia in chronic torpor of the liver, chronic

hepatitis, and even hepatic abscess. After a few doses the patient often feels a very sudden and sometimes severe pain in the right hypochondrium, often a feeling of shock; this does not recur, but there is very constantly a drawing sensation in the region of the liver. The skin rapidly clears up under the influence of the drug, appetite and sleep return, hectic fever, if present, vanishes, and the gloomy despondency of the patient gives place to hopefulness. The medicine often produces very free perspiration, and apparently also diuresis. To induce this favorable change, however, the muriate must be steadily given for from six to ten days, as its action does not sooner become apparent. The dose is twenty grains twice or thrice daily. When there is a chronic enlargement of the viscus, the administration should be persevered in for weeks and even months, and the liver will, in nearly all cases, gradually shrink away to its normal size. Dr. Stewart states that he advances these facts as the result of a very large experience in India.

TREATMENT OF INTESTINAL WORMS.

DR. WM. DALE (*Boston Medical and Surgical Journal*):

1. For *tænia* (tapeworms) he gives preference to the male shieldfern (*Aspidium filix-mas*). Turpentine, though pretty efficient if given in an effectual dose, is apt to produce strangury. Koussou is difficult to obtain in an unadulterated form, and is uncertain in its action. Kameela is objectionable on account of the severe griping pains it induces. To prepare the patient for a dose of shieldfern, no food should be taken after breakfast, except mutton-broth or tea. In the evening a dose of castor oil, or of compound senna mixture, is administered with the object of evacuating completely the contents of the intestine, so that the worm may be exposed to the full action of the vermifuge. Upon the following morning the malefern is to be taken, in the dose of one drachm and a half of the liquid extract rubbed up with half an ounce of mucilage; this mixture is then added to about two ounces of milk, which is the favorite food of the worm, and therefore the best vehicle for the administration of the medicine. The patient should lie quiet for two and three hours after taking the dose, otherwise it is apt to cause nausea and faintness. At the end of that time another aperient dose may be required, since the malefern itself does not always purge. Nothing in the form of food is to be allowed until the bowels have been evacuated, with the exception, perhaps, of a little broth or tea, or brandy and water in case of faintness. This whole process should be repeated at the expiration of a week, though, as a rule, the entire worm is killed and expelled by the first dose. In rare cases three separate doses are necessary. The head is seldom found, owing, perhaps, to

its small size, and possibly to the change it undergoes from maceration in the intestinal juices, so that the discovery of some of the smaller joints may be regarded as tolerably satisfactory evidence of the destruction of the worm.

2. For the round worm (*Ascaris lumbricoides*) *santonine* is recommended as a specific, and repeated small doses are advised, instead of a single full dose, since the latter is apt to produce some disagreeable symptoms, such as irregular pulse, singing in the ears, vertigo and nausea. A partial suppression of urine may follow the administration of even a small dose, but this is only temporary. The proper dose for a child five years old is three or four grains every night at bedtime, which is to be taken with the following restrictions: A light meal of mutton-broth, with very little bread, may be allowed, but no food should be taken after this. The santonine must be taken in dry sugar or honey, and is more efficacious when no liquid is swallowed immediately after. As in the case of tapeworms, the vermifuge should be preceded by a brisk cathartic, such, for instance, as the *mistura sennæ comp.*, which acts so efficiently upon the small intestine. The powder (*santonine*) should be taken every night for a fortnight, and as it is not itself aperient, it may be necessary occasionally to administer a cathartic.

3. The short thread-worm (*Oxyuris vermicularis*) inhabits the lower portion of the intestine, and can generally be removed by enemata. Of these, a solution of common salt in an infusion of quassia (in the proportion of two ounces to a pint) is suggested as simple and efficacious. If this treatment fails in entirely dislodging them, they are probably resident higher up in the colon. It is then advisable to continue the injections, and at the same time administer by the mouth small doses of aloes in combination with iron and quinine. For children, wine of aloes with syrup of ginger may be ordered. If this treatment be continued for a fortnight or three weeks, the patient will rarely be further troubled with the annoyance.

COLD-WATER TREATMENT OF TYPHOID FEVER AND RHEUMATISM.

DR. EDES gives the following summary (Boston *Medical and Surgical Journal*):—

Schols, in Bremen, has lost, since 1869, 5 cases in 125, that is, 4 per cent. Baths were given when the temperature rose above 39° C. (102.2° Fahr.). In severe cases, cold applications were made to the chest and abdomen. The chief contraindication to this treatment is intestinal hemorrhage. It is also but little applicable to those rare

cases, mostly among habitual drunkards, where the disease, though presenting severe symptoms, is not characterized by a high temperature.

Bauer, in Munich, concludes that the mortality in general is diminished by the cold-water treatment; that the mortality is increased by a disregard of the disease in its early stages, the want of regular, early anti-febrile treatment, and by insufficient nourishment. Baths were given at 39.6° C. (in rectum), and ice-bags applied. The baths were usually at 16° C. or 18° C., or if the patient was very weak a longer one, at a higher temperature, was used.

Lissaner, in three army hospitals, observed a mortality from typhoid of 11 in 46, under an expectant treatment, and of 6 in 97, under the use of cold water. He considered that great advantage was derived from a combination of the cold-water treatment with the use of quinine, according to Binz' plan, given 1 grm. (15 grains) at night. In this way the remission of the fever was prolonged, so that it was possible to get along with two, or at the most three, baths per diem.

Götz reports from the Vienna General Hospital that the mortality from typhoid under the expectant treatment was 28.72, under cold-water treatment, 15.4. In typhus maculata, on the other hand, the corresponding figures were 17.97 and 26.16.

Brand criticises a report from Duchek's clinic, in Vienna, which was unfavorable to the cold-water treatment, because the baths were not continued through the night, as they should have been. He says that it is not sufficient to bathe when the temperature reaches 39° C., but that the baths should be given often, and long enough to keep the temperature between 37° and 38° (98.6° and 100.4° Fahr.), or within a few tenths of a degree of this limit. He thinks that the fever may thus be completely kept under, and, if the treatment is begun early enough, the mortality reduced to zero.

Riegel applied the cold-water treatment in the Julius Hospital, at Würzburg, in a mild (?) form. The bath was warmed to 68° Fahr., and the patient allowed to remain therein ten minutes. Half baths were used, and colder water poured on from above. Baths were given when the temperature reached 103.1°, and in the intervals cold compresses were applied to the abdomen. In the years 1870 and 1871, of 156 patients with typhoid, only the severer cases being reckoned, only 7 died (4.48 p. c.). Before the introduction of the cold-water treatment into the same hospital the usual percentage of mortality was 20 per cent. Riegel, like Jürgenson and Hagenbach, observed very frequently a severe burning pain in the soles of the feet, so that there seems to exist some connection between this symptom and the cold-water treatment. Intestinal hemorrhage seemed no more frequent

than under an expectant treatment, perhaps from the mild character of the hydro-therapeutics.

Dr. Kelly reports two cases of hyperpyrexia in rheumatism, in one of which, a man, the temperature gradually rose until death, while in the other, in which the temperature rose even higher, the cold pack was applied, by sheets continually wrung out of cold water, reducing the temperature in four and a half hours from 106.2° to 99.6°. Brandy was frequently given throughout the treatment. From this date the patient began to mend.

ACTION OF QUININE ON THE COLORLESS BLOOD-CORPUSCLES.

In *The Practitioner*, Dr. GELTOWSKY details some experiments on this subject, and concludes :—

From these experiments it follows :—

a. That quinine arrests the movements of the colorless globules of the newt's blood, if it be used in the proportion of one part to 800 or 900 parts.

b. That the globules of the female's blood resist longer the action of quinine.

c. That the globules of the blood of animals enfeebled by the loss of blood in previous experiments resist the action of quinine a shorter time than the globules of animals entirely fresh.

d. That the solution of quinine, whether it be in water or in serum, acts with the same force. As regards the solution of quinine in serum, it is remarkable that the movement of the colorless globules ceases in a much shorter time if the serum is not perfectly fresh, although the reaction be neither more nor less alkaline than that of normal serum. I found, for instance, that in a preparation which contained two drops rabbit's serum, kept for twenty-four hours after the animal died, and three drops of newt's blood, after half an hour the movement of the colorless globules had entirely ceased.

On injecting into the blood doses which cause the death of animals, quinine has no influence on the colorless blood-corpuscles. Even if the quinine had had the same influence on the colorless corpuscles of the blood in the interior of the organism as under the microscope, it would have been impossible to explain, by the action of quinine on the colorless corpuscles, the cure of certain maladies under treatment by this drug, because, according to the preceding experiments, it is necessary to employ one part of quinine to 2,800 parts of the blood of man. Hence, in the case of a man in whom the quantity of blood would

amount to about 15 to 20 pounds, it would be necessary, in order to obtain the special effect, to take almost one drachm of quinine, which would be impossible.

I am therefore not able to affirm that quinine has an influence on the quantity of colorless blood-corpuscles in the organism; and I wish only to say that in leukæmia, under treatment by that drug, the decrease of these blood-corpuscles must be explained in some other way, and not by simple direct action of quinine on colorless blood-corpuscles; for instance, by direct action on the nervous system and indirect action on the glands, or other organs whose function it may be to give rise to or to destroy the colorless blood-corpuscles. But that would be a pure supposition, and not a result proved by experiment.

MIXED ANÆSTHESIA IN OBSTETRICS.

THE effect produced by the new combination of morphia and chloroform, just now so extensively employed in France, is called by Claude Bernard a condition of *mixed anæsthesia*. In a note from Guibert presented by Claude Bernard to the Paris Academy (*Gaz. des Hôpitaux*, June 25, 1872), the method of its employment in obstetrics is reported as follows:—

It is in cases of difficult labor that this analgesia may be induced with the happiest effects. It diminishes the pain in marked degree, and may be continued for several hours without incurring the least danger to the mother, without injuring the condition of the infant, without modifying uterine contractions to any extent, and without increasing the subsequent danger of hemorrhage.

I am in the habit of employing this method as follows: I make a subcutaneous injection into the forearm of about one ctgr. of chlorhydrate of morphia at the moment when the pains begin to be severe, or when agitation with anxiety and discouragement supervenes. A quarter of an hour after the injection I commence the inhalation of chloroform, by the ordinary method, at the beginning of a uterine contraction. So soon as a dozen inspirations have been made, the patient experiences, instead of an augmentation, an alleviation of the pain, while the contractions continue in force. I suspend the inhalations so soon as the pains are over, and again administer them on their recurrence. In this way I continue throughout the whole labor, administering chloroform only during contractions.

The state of agitation and anxiety is succeeded thus by a condition of calm and comfort, in a contrast which is heightened by expressions of the liveliest gratitude on the part of the patient. When the head

has reached the perineum, and the moment of agony has arrived, there need be no fear nor hesitation to again inject, this time with one-half etgr. morphia, which is sufficient now to render supportable—at times, indeed, to absolutely nullify—the atrocious pains of passage. The analgesia thus induced, moreover, diminishes in marked degree the extreme fatigue incident to severe labor.

I have notes of a case of pelvic version in a trunk-presentation, practised more than sixteen hours after the escape of the waters, executed with the greatest facility under this condition of analgesia, the mother being so far conscious all the time as to be able to answer all questions addressed to her, uttering neither cry nor complaint.

The combined action of chloroform and morphia completely dissipates that tetanic contraction which renders version in these conditions so difficult and painful.

This condition of analgesia without anæsthesia may be easily maintained if the precaution be adopted to frequently interrupt the inhalations of chloroform.

In a case of mixed anæsthesia, induced for an amputation of the breast, I observed a considerable reduction of the pulse. It fell gradually from 100 to 54 in the minute. There was not the least danger throughout. Half an hour after the operation, the pulse slowly increased to 80 per minute.—*Philadelphia Med. Times.*

COLD IN PYREXIA.

THE following is an abstract of the more important parts of a discussion on the use of cold in pyrexia, which took place at the London Clinical Society, reported in *Medical Times and Gazette* of October 19:—

Dr. Southey related a “Case of Acute Rheumatism, with Cerebral Symptoms and High Temperature, treated unsuccessfully by Cold Affusion,” in a well-built man, aged 35, of highly nervous temperament, in the habit of drinking wine and beer, but not intemperate. This was his first attack of acute rheumatism. The rheumatic articular inflammations were not established until after he had been ailing for fourteen days, with a temperature ranging between 100° and 102.5°. The rheumatic symptoms were well marked. The invasion of several joints with swelling and redness, the tongue, the pulse, and the sweating were highly characteristic. On the eighteenth day of illness pericarditis set in, the joint-inflammation suddenly subsided, and delirium of a peculiar kind, preceded by head-pain and obscurity of vision, presented itself; the temperature now ranged between 104° and 105° in the axilla for ten days, while twelve grains of quinine,

from six to ten ounces of brandy per diem, and various opiates, as well as chloral, were administered with little sedative effect. Bronchial symptoms now ensued, with great failure of power, although food and stimulants were freely taken. Delirium, akin to coma vigil, still continuing, and his temperature marking 105° , the patient was immersed in a bath quickly cooled down from 96° to 71° . The effect was immediate dissipation of delirium, with reduction of temperature to 100.5° , followed by short repose; but, the bodily temperature quickly rising again, he was maintained wrapped in a wet sheet exposed to the air of the room at 65° for an hour. After this his temperature fell, and remained between 101° and 102° for two days. Some rest was now obtained, the pulmonary symptoms relieved, and respirations fell from 36 to 28 per minute. Subsequently, the wet sheet was frequently employed, on four occasions as often as three times in the twenty-four hours, with invariable relief of the delirium and subsultus. From the eighteenth day of his illness up to the fortieth, quinine was given in doses varying from twelve to twenty-four grains in the twenty-four hours, as well as brandy, from four to ten ounces, without noticeable good or ill effect. On the thirty-third day of his illness his temperature fell spontaneously to 100.5° ; he was then quite rational for twelve hours, and there was a slight return of the rheumatic pains in the joints, which lasted, however, only for a few hours. The patient gradually sank with low broncho-pneumonic symptoms on the forty-second day of his illness. The post-mortem examination revealed that swollen condition of the glandular viscera ordinarily discovered after all acute febrile diseases, but no tubercle anywhere in the body, and no apparent mischief in the brain or its membranes. The author of the communication considered the case one of cerebral rheumatism, and thought that the cold-water treatment had prolonged life and relieved the delirium.

The President, who had seen the patient, thought the bronchitis was produced by the cold water.

Dr. Southey had known the patient for years, and never saw him intoxicated. He made careful inquiry, and found that very little alcohol upset him, so that he could not take it.

Dr. Wilson Fox thought the relation of temperature to delirium exceedingly interesting. This was almost the first case of cerebral rheumatism which had proved fatal with the cold-water treatment. The temperature of the patient was comparatively low for cold affusion. He considered that they had better not adopt any active treatment in these cases until they should see whether nature was to prevail and the temperature fall of its own accord. We often see cerebral symptoms come and go with low temperature; and, on the other hand,

we often have high temperature and no delirium. He thought it better, in such cases, to wait until there was a high temperature—say 107° —before applying the cold water. Cerebral symptoms did not of themselves threaten a fatal issue; no more did a temperature of 105° . He would wait till a temperature of 106° was passed, or even 107° . There were no deaths recorded under 109° , and a temperature of 106.5° had been recovered from naturally. Bronchial complications did arise after cold water, but they might arise from the high temperature itself. He had felt some little doubt of the propriety of using cold water in typhoid till after the study of the records, which showed that bronchial complications occurred as frequently without it.

Dr. C. T. Williams said, with regard to the bronchitis, he had been using the cold baths to keep down temperature in cases of phthisis, and though such subjects were prone to bronchitis, no evil result followed.

Dr. Southey said the cold sheet always removed the delirium.

Dr. Powell asked what was the effect of cold on the joint—did it check the inflammation?

Dr. Weber said he had seen the joints get better before the head was affected, and the joints get worse as the head got better.

The President mentioned a case where the temperature suddenly rose to 107.5° . They put the patient in a bath at 90° , and cooled it down to 47° . The patient was in it for two hours, and the temperature was very greatly reduced. The pain in the joints was relieved. At night the patient was put in the bath again for a shorter time, and was cooled down to 80° . The joints did not get bad again. It was a question how far this rise of temperature was due to mechanical injury to the brain.

Dr. Greenhow also read elaborate notes of an interesting case of acute rheumatism with high temperature unsuccessfully treated by cold water.

Dr. Wilson Fox said we had yet a good deal to learn with regard to the use of cold in such cases. There seemed to be two kinds of them. In one the reduction of temperature followed immediately on the bath, and was permanent; in other cases there was a long-continued attack of fever, requiring long-continued bathing. In these he would only use cold as a means of treating hyperpyrexia, leaving the disease to run out, or act on it by other remedies. If the high temperature returned, it might be well to wait to see if it would fall of its own accord.

IODIDE OF POTASSIUM FOR HYDATIDS.

The Medical Times and Gazette, of Oct. 19, says editorially:—

THE galvanic cauterium may be more used and more useful; but, as an act of simple justice to the memory of the late Dr. Tanner, we wish to put on record the fact that, in addition to the cases recorded by him, four cases (three of them verified by post-mortems and elucidated by the microscope) are known to us in which the daily use of iodide of potassium in full doses for a few weeks (in none exceeding two months) was followed by the gratifying result of the gradual wasting and complete cure of the hydatid cyst—the one patient remaining well after several years, the others dying, after some months, of totally different diseases, and the result becoming patent at the autopsy. Two such cases occurred in the practice of the late Dr. Heckford, but were known to, and verified by, the writer of this article. These may be pure coincidences of a natural cure and the exhibition of the drug; but the multiplication of such coincidences seems to us to render the use of so innocuous a method, or of some similar plan, imperative in all cases where more heroic means are inapplicable.

ON CHLORAL IN PERTUSSIS, AND A POULTICE OF DIGITALIS IN SUPPRESSION OF URINE AND IN PUERPERAL CONVULSIONS.

BY G. R. HENRY, M.D.

I HAVE used the hydrate of chloral now for two years, and have not met or heard of a case of whooping-cough that was not promptly cured. I have suggested its use to a number of practitioners, who all report a perfect success. It will control the spasmodic cough, if given in the latter stages; and, if given early, it will prevent the whoop from appearing. I use it dissolved in sirup of tolu, in doses of two to ten grains, according to age of child, and repeated as often as the cough occurs: and I have yet to see a case that required more than ten days' treatment. Contrast this with the weeks and months of suffering and distress which we have seen wear out our little patients.

Another remedy, which has not the position given to it to which it is entitled, is a digitalis poultice, applied to the abdomen in cases of *urinal suppression*.

I have used it with marked success in cases of puerperal convulsions, and in other cases where the stomach would not tolerate remedies by the mouth.—*Medical News*.

Burns.—The remedies used in the treatment of this class of accidents in the Bellevue Hospital are as numerous as the visiting surgeons and house surgeons are disposed to devise.

Common white paint kept continually spread on the surface is a remedy quite commonly used.

Equal parts of Garland's cerate and sweet oil is a remedy favorably known.

A very satisfactory remedy is Dr. Buck's burn-mixture. The following is the formula for its preparation:—℞. Gum Tragacanth, ℥ ij.; Gum Acacia, ℥ iv.; Molasses, Aqua, ℥ j.

Mix the gum and water, and let them remain until thoroughly dissolved, and then add the molasses. This is spread over the surface with a brush, forming a continuous coating, and if removed by the process of suppuration, it is to be immediately re-applied.

Syr. Acaciæ, with sufficient glycerine to make a liquid which can easily be spread, is sometimes used, and then covered with lycopodium. —*Medical Record*, April 15.

ABSTRACT OF THE SECOND REPORT OF THE NITROUS OXIDE COMMITTEE OF THE ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

DR. FRANKLAND, Mr. Coleman, and Mr. Braine were appointed to carry out individually experiments to ascertain, if possible, the physiological action of the gas. The conclusions which the two first named gentlemen consider deducible from their investigations are given in the report.

With regard to the question whether nitrous oxide is decomposed when it is respired, a series of experiments were made by Dr. Frankland on a young and tame rabbit, and the results are given. Although the results do not admit of being used for the absolute solution of the problem proposed, nevertheless—as the observation of a manometer showed that the gases suffered but a very small diminution of volume during respiration—they may, the experimenter thinks, be safely taken as proving that not more than a very small proportion of nitrous oxide, if any, was decomposed, since the percentage proportion of this gas underwent no diminution during the progress of respiration. It was also shown, Dr. Frankland believes, by his experiments, that nearly the whole of the oxygen absorbed by the animal was employed in the oxidation of carbon; that the united volumes of nitrogen and nitrous oxide suffered a corresponding slight augmen-

tation ; and, thirdly, that the volume of nitrogen in the mixed gases experienced an apparent slight reduction during their use in respiration, whilst that of nitrous oxide underwent a slightly greater increase. But, with regard to the last results, Dr. Frankland admits that they may be considered within the limits of experimental error.

Mr. Coleman proceeded also to determine the question whether nitrous oxide was or was not decomposed when respired. He deduces from his experiments made on the expired air of the human subject, the conclusion that, if nitrous oxide gas be at all decomposed in the blood, it must be only in very small quantities.

The majority of the Committee adopt the opinions advanced by these two gentlemen, and recommend that, in the event of alarming symptoms presenting themselves during the administration of the gas, it be immediately suspended, and no impediment be offered to the free admission of air into the lungs.

Prolongation of the anæsthesia, the Committee state, may be accomplished in mouth operations by "a nose-piece," and by throwing a jet of gas into the mouth at each inspiration while the operation is proceeding, the nose being kept closed by a spring clip ; in operations on other parts of the body, by checking and re-supplying the gas through the face-piece from time to time, as circumstances may require, insensibility can be kept up for several minutes ; and the Committee direct the attention of surgeons to this fact especially, because many accidents have lately occurred from the administration of chloroform. The Committee point out the great improvements carried out in the administration of nitrous oxide, and in its storing and liquefaction.

The Committee have now in their possession the records of 58,000 cases in which the gas has been administered in this country. This extended experience enables them to add that the occasional occurrence of vomiting, hysteria, etc., which occur under the influence of the gas have been less manifested than usual, from the better administration and the purer character of the gas.

Its mode of producing death they believe invariably to commence at the lungs, and that artificial respiration will resuscitate the animal as long as the heart continues beating. Nitrous oxide mixed with chloroform did not answer in the hands of the Committee ; but the latter as an adjunct was found to be of service in special circumstances.

The Committee complete their report by expressing their firm conviction that nitrous oxide is the safest anæsthetic known, and that not a single fatal case has occurred which can be fairly attributed to its action.—*British Medical.*

CASTANEA VESCA IN WHOOPING-COUGH.

DR. THOMAS D. DAVIS, formerly resident physician in the Philadelphia Hospital, has made, under Dr. J. S. Parry's superintendence, a careful study of the value of chestnut leaves in whooping-cough. He used Prof. Maisch's fluid extract in doses of f. 3 ss. to f. 3 i. every three hours, for a child six years old. He says (*Philadelphia Medical Times*, December 28, 1872), *inter alia* :—

On two days before using the chestnut leaves all medication was stopped. The disease immediately increased, both in the number and severity of the paroxysms. The children were all otherwise healthy, and between four and seven years of age. I have tabulated the cases, so that there can be seen at a glance the number of paroxysms in each case while on the use of belladonna, without it, and for five days after using the other remedy :—

Number of Cases.	Paroxysms using Belladonna.	Without Medicine.		Using Fluid Extract Castanea Vesca.				
		1st day.	2d day.	1st day.	2d day.	3d day.	4th day.	5th day.
1.....	16	20	27	19	11	9	5	2
2.....	14	24	24	20	9	4	4	2
3.....	13	13	17	12	5	4	1	1
4.....	12	16	20	10	6	3	2	0
5.....	12	18	18	7	4	5	2	1
6.....	12	15	20	9	5	3	1	2
7.....	11	11	18	6	4	2	1	0
8.....	10	9	12	7	2	0	1	0
9.....	9	12	13	5	4	2	1	0
10.....	7	9	10	2	2	2	0	0
11.....	7	8	15	4	3	1	0	0
12.....	5	6	10	3	1	1	0	0
13.....	5	7	6	2	0	0	0	0
14.....	3	4	4	3	1	0	0	0
15.....	2	4	5	4	2	0	0	0

In this table the cases are arranged in the order of their severity while on the use of belladonna. The first eleven cases all had the characteristic whoop; the remainder had well-marked paroxysms, but not the full spasm, and they recovered without having it. In each case the violence of the spasm was reduced even more markedly than the number of the paroxysms. On the days on which the cases are marked as having no paroxysms, they had slight coughs, but no sign of spasm whatever. The castanea was continued for a week, after which, in a few cases, a simple expectorant was given. The

nurse in charge, who had witnessed many epidemics of the disease, declared she had never seen a medicine act like it.

THE MEDICINAL PROPERTIES OF THE COW-TREE OF SOUTH AMERICA.

BY JOHN R. JACKSON, A. L. S.

THE presence of milky juices in plants is not uncommon; indeed, it is a character of many natural orders. The juices of some of the milk-yielding trees, however, do not solidify, and they are used as an article of food. Perhaps the best known of these trees is that referred to *Brosimum galactodendron*, Don. It grows in large forests on the mountains of Cariaco, and in other parts of the sea-coast of Venezuela. It forms a tree frequently over 100 feet and often running to a height of 60 or 70 feet before branching. The milk, which is obtained by making incisions in the trunk, is said to have a very agreeable taste, somewhat resembling that of sweet cream, and a slightly balsamic odor; the only unpleasant feature about it is that it is somewhat glutinous, but it is very nourishing and perfectly wholesome.

Tabernaemontana utilis, Arn., known as the Hya-Hya, or Cow-tree of British Guiana, likewise yields a milky juice, which is perfectly bland and wholesome, though the general characters of the order are poisonous and acrid. The tree is tapped to obtain the milk. The milk, or Cow-tree of Para, known as the Massaranduba, has been referred to *Mimusops elata*, Allem; but its determination is doubtful, though there is no question of its belonging to the natural order Sapotaceæ. The milk, which flows slowly from the wounded bark, resembles good cream in consistence, but it is said to be too viscid to be a safe article of food.

Certainly, the most important in a pharmaceutical point of view of all the Cow-trees is the *Clusia galactodendron* of Desvaux. The tree has a thick bark covered with rough tubercles, and bears leaves of an obovate form and about three inches long. It is a native of Venezuela, but is also found in the Cauca Valley, north of the State of Antioquia, on the banks of the Abraeto river and on the Pacific coast as far as Tumaco.

Many interesting accounts have been given of this tree, but the following notes from a letter on the subject, written by Mr. R. B. White, of Medellin, are the most comprehensive. The tree, it appears, has a decided partiality for certain localities, and there can be no doubt that

while it needs the warm, damp climate of the Choco, it likes good drainage, as it is always found on the low ridges just rising off the plains; mean temperature 27° to 30° Cent., and never exceeds 200 metres above the level of the sea. The general utility of the milk of this tree is well known, but its most valuable property has been quite overlooked,—that of curing dysentery. It contains a resinous and an astringent principle, and an aromatic and tonic substance. The action of this combination is mechanical so far as relates to the resin, which no doubt coats the intestines with a thin film and allays irritation; and, secondly, it is astringent, tonic, and antispasmodic. So far a knowledge of the constituents of this milk would lead one thus to judge theoretically of its action. With regard to practice, no other medicine is used in the Choco and on the Pacific coast of New Granada for dysentery; and this disease is thought little or nothing of, as it is so easily cured. The milk is to be procured everywhere, and is generally sold at from one to two dollars per bottle. Mr. White says: “For upwards of two years I saw it constantly used amongst the workmen employed on the Buena Ventura Road, Pacific Coast, and in the most unhealthy climate. We had at times from 500 to 700 men employed, and out of numberless cases of severe dysentery I never knew of a fatal case, and I have seen cures effected when the cases had gone so far as to seem hopeless. As a general illustration of its action, and method adopted of using it, I will refer to my own case. I was attacked with diarrhoea, which in two days passed into dysentery, very severe. In a short space of twelve hours I was reduced to a state of utter prostration, suffering the most excruciating pains imaginable. The bloody discharge was so terrible that it seemed easy to predict death within a few hours; not a shadow of a medicine was to be had, as I was in a hut in the woods, and the violent phase of the disease was only developed at nightfall, and thus I passed the night in a helpless state. At daybreak the wife of one of our inspectors was called in as nurse, and by 9 o'clock ‘leche de vaca’ was procured. Up to this time I had been getting rapidly worse, and was then hardly conscious. The milk was given to me (a tablespoonful in a glass of water with a little sugar) every half-hour till 12 o'clock mid-day, and at this hour I was perfectly free from dysentery or the slightest symptom of it. Broths and light food were then given to me for a few days, and I was restored to perfect health without taking any more milk or other medicine, and without having the least recurrence of symptoms of dysentery. I have seen many severe cases successfully treated in this way, but none more severe than my own, and am sure that no medicine or known system of treatment can be so efficacious as the leche de vaca treatment.

“ Admitting the fact of its power to cure dysentery, a little reflection will convince one that the composition of this milk is wonderfully calculated to produce the results I have stated. The only question is, can it be used otherwise than in a fresh state? Up to a certain period I can answer this question in the affirmative. The milk, even when corked in a bottle, soon turns sour and coagulates, but this, for many months at least, does not impair its efficacy. It is possible that if putrefaction ultimately ensues, the milk will lose its properties. It is also possible that in certain cases the sourness of the milk would be prejudicial, but I do not see why this should not be remedied by the addition of some inoffensive alkali.”

Mr. White says he has some milk which he brought himself from the Choco, which has been contained in a bottle for more than a year and a half, and is apparently as good as ever. One of the great advantages of the use of this milk in dysentery is the radical cure it effects. Its tonic and astringent properties appear to be brought into play as they are required; and as the resinous principle first serves as a palliative, the antispasmodic, tonic, and astringent properties work out the cure.

Mr. White's opinion of the medicinal properties of this milk is so favorable that he concludes his notes by saying that he cannot but think that, in combination with other medicines, it might serve as a base for successful treatment of cholera.

It has been said that a single tree will yield as much as a quart in an hour.—*Pharmaceutical Journal*.

THE HOT SAND-BATH.

BY DR. CONRADE.

SAND, like most minerals, is a bad conductor of heat—the more so from being composed of small incoherent particles. It possesses a high specific heat—that is to say, a large capacity of retaining heat, without allowing it to escape but slowly. The use of hot sand for baths forms a part of popular medicine in southern countries in which the mineral is abundant. By embedding the whole body or some of its parts in hot sand, we expose them to the action of the heat stored up in that medium. If not exposed to contact with substances of a low temperature, the quantity of sand required for a bath may be expected to retain its heat nearly unchanged for more than an hour. In the hot sand-bath, the layers used for surrounding the body are generally covered by other sand of much higher degrees of tempera-

ture (120 to 130 deg. Fahr. or more). These not only steady the heat round the body, but increase it gradually, without inconvenience to the patient. Over all is laid a blanket, which prevents too rapid cooling by the influence of the outer temperature.

The known effects of high temperatures on the body consist chiefly of the relaxation of all tissues and the enlargement of the blood-vessels, which become more filled with blood without any increase in the pressure. The flow of the blood in the neighboring structures is therefore directed to the heated parts, relieving the former ones of as much of their contents as the increased space in the enlarged vessels will allow. If the whole skin be subjected to the heat, the circulation is drawn to the surface and the inner organs get rid of certainly not a small quantity of blood during the bath, provided the elasticity of the interior blood-vessels be normal. This relief, however, can no longer take place when the heat gets easy access to the inner parts as well. The influence of the heat soon becomes universal, and disturbances in the respiration and in the action of the heart will unavoidably follow. The described effects may be properly divided into —A, those exercised on the heated parts; and B, those produced on the neighboring parts.

A. The heated parts (1) become more filled with blood, and (2) have an increase in the secretion of liquid matter from the blood; consisting chiefly, but probably not entirely, of water.

B. In the adjacent parts (*a*), those nearer to the heart, the blood-vessels are relieved; (*b*) in those remote from it, the fluidity of the blood is diminished.

To a certain extent it depends on the method of treatment adopted which of these results will be obtained in the first place. In case of high degrees of heat being resorted to, much perspiration will follow; while lower temperatures, applied for a longer time upon a large surface, are more apt to spread towards the inner parts, and thus the described effect upon the distribution of the blood and its consequences may be presumed to be the most prominent result. In taking sand as a vehicle for the application of heat, no other complications will arise; the respiration remains undisturbed, the heat not entering the lungs; the circulation, too, goes on as usual, the action of the heart not being interfered with. No congestion of any kind will intervene; no palpitations, no headache, etc., follow. The skin, not being excluded from contact with the air, perspires freely, does not become softened, and does not lose its former resistance to the influence of the weather, and is still protected from draught and cold. The patient, whilst undergoing his treatment, may enjoy in the mean time the comforts of rest and sleep.

The advantages of the use of hot sand consist simply in its allowing the application of heat entirely free from any of the complications which more or less accompany all other methods. Water excludes the air hermetically, prevents perspiration, and overcharges the kidneys during the stay in the bath. It cannot be supported as hot as sand can without feelings of uneasiness, and, besides, it has a weakening and softening influence upon the skin. Steam and hot air baths are not very fit for patients at all; they require already a certain strength to resist the influence which they exercise upon everybody at the beginning. They interfere too much with respiration and circulation to allow their continuance for the purpose of cure. Delicate persons and children are entirely unable to make use of them. They increase the general temperature of the body by two degrees and more, thus causing a sort of artificial fever. None of these inconveniences occur in the hot sand-bath, if applied with sufficient care and experience.

From the foregoing, it will appear that the diseases in which the application of heat by the aid of sand can be tried with hope of success, are of two classes: in the first class, to bring about a large perspiration is the chief object; in the second class, perspiration is better avoided, and the effect of the heat to be directed towards correcting the circulation and restoring the vital processes. Under the first head are comprised rheumatism and gout (in which Trousseau appears to have employed this treatment long since), exudations, and cedemata from previous disorders, which will probably all derive benefit from heat. Under the second head we will enumerate morbus Brightii (the acute stage of course excepted); cases of recent paresis, which may be improved if the lesion be not the result of some disorganization on the part of the nerve, be it by removing some injurious swelling pressing upon the nerve, or by improving its vegetative condition. That, of course, the diagnosis must decide, and the case has to be treated according to it. The same remarks apply to recent cases of partial atrophy, of not too long duration. In cases of scanty catamenia, in irregularities in the flow, dysmenorrhœa, and similar complaints, if not due to coexisting anæmia, experience has shown in many instances that cases of that sort improve much better under the hot sand-bath than after any other treatment. Scrofula and rickets derive great benefit from carefully administered hot sand-baths. Torpid ulcers and badly healing wounds improve wonderfully sometimes after a few applications.

Perhaps in some kinds of chronic exanthemata the hot sand-bath might be of good service, although no experiments have been made on this topic as yet. It speaks very much in favor of the hot sand,

that, whenever judiciously given, the patient likes it, and has recourse to it in many cases.

Further information on the subject will be found in the following:—Dr. Schwabe, *Deutsche Klinik*, 1869, No. 33 (being a report of a medical man, himself a patient). Dr. Flemming, *ibid.*, 1868, Nos. 12, 14; 1870, Nos. 35–38. Dr. Sturm, *Zeitschrift für Medicin*, by Küchenmeister, 1867, p. 293 *et seq.*; and 1868, p. 241. Trousseau's *Clinique de l'Hôtel-Dieu*, ed. ii, vol. iii, pp. 380, 381. *Archives Générales de Médecine*, 1856, p. 307. Schmidt's *Jahrbücher der Medicin*, vol. 133, p. 62. Dr. Flemming, of Dresden, enters into a minute comparison of the different methods of utilizing heat as a therapeutic agent.—*British Medical Journal*.

PHOSPHORUS AS A NERVE TONIC.

In the course of a paper upon the results of overwork, read before the London Medical Society, Dr. Routh said: The symptoms of mental decay resemble the gradual changes that come over old people, and yet are very similar also to those induced by venereal excesses in both sexes, except that in the latter there are symptoms of spermatorrhœa, which are absent in cases suffering from overwork. In both cases the tendency is to the production of idiocy from softening of the brain and insanity. He said there was reason to believe that the immediate cause of these symptoms was, deficiency of phosphorus in the brain, and endeavored to prove this by considering *seriatim* the following points:—1st. It is proved chemically that a man grows older and mentally weaker, or becomes idiotic, as the brain contains less phosphorus; this was shown by the analyses of Hentier. 2d. The solidity of the brain in a measure depended upon protagan, a phosphoric compound, and those foods which were richest in phosphorus were found by experience to renovate most speedily weakened brain power, such as shell-fish and fish generally. 3d. The assertion made by some that phosphorus could only be assimilated by previous conversion into phosphoric acid was combated, the effects of the two being shown to be perfectly different, phosphoric acid producing, in large doses, fatty degeneration of the heart, liver, and kidney, whereas phosphorus produced necrosis of the jaw-bone, and excited the nervous and sexual systems. The opinion of Dr. Von Bibra was also quoted in evidence of this. Phosphorus also reduced or removed congestion of the brain. 4th. Dr. Routh next showed that those diseases produced by softening of nervous matter were precisely those which were cured often-

times by the internal administration of phosphorus, viz., some forms of paralysis, eczema, and other skin affections, cerebral congestions, with great debility and insomnia. The authority of several writers was cited on these points,—Delpech, Prof. Fisher, of Berlin, Dr. Eames (in the Dublin Journal), Dr. Burgess, and Dr. Hammond, of New York. 5th. The special treatment indicated in these cases was next considered—1st. Complete rest of mind, especially abstention from all occupations resembling that upon which the mind has been overworked; 2d. The encouragement of any new hobby or study not in itself painful, which the patient might select; 3d. Tranquillity to the senses, which expressly gives in these cases incorrect expressions, putting only those objects before them calculated to soothe the mind; 4th. A very nourishing diet, especially of shell-fish; 5th. The internal administration of phosphorus, whether in its allotropic form or as the “Solutio Phosphori Medicati,” prepared according to Dr. Hammond’s formula.—*The Doctor*, for Dec. 1, 1872.

Cerebral Paresis treated with Phosphorus.—Dr. G. Tempi attributes this disease to an excessive waste of protagon ($C^{11}H^{11}N^{10}PhO^{10}$), generally the result of over-use of the cerebral or reproductive function. He prescribes five centigrammes of phosphorus, to be dissolved in some ether and mixed with enough powder and extract of liquorice to make a mass, which may be divided into fifty pills of twenty or twenty-five centigrammes each. Of these he gives at first one a day, increasing gradually to five a day. The limit of toleration of the remedy is often indicated by frequent alvine discharges. Meat and eggs are useful, for the phosphorus contained in them. Wine, coffee, and cold douches to head, serve as valuable stimulants. The author also recommends mild mental gymnastics.—*Gazetta Medica Italiana-Lombardia*.—*N. York Med. Journal*, Jan. 1873.

PHOSPHORUS IN NEURALGIA.

PHOSPHORUS is a remedy little, if at all, employed by the regular practitioner in cases of neuralgia, though I believe frequently exhibited by the homœopath. A case, however, came under my notice some time since which so strikingly illustrates its value as to induce me to record it.

A gentleman, who had for years suffered acute and frequently recurring paroxysms of neuralgia of the chest walls, applied to me for advice. I found that he had been a regular round of London and provincial doctors, and that every plan and remedy appeared to have been tried.

I failing as signally as my predecessors, he sought aid of a homœopath, and was relieved in a very short time. I lost no time in ascertaining the remedy which had worked so speedy, and, as it proved in the sequel, so permanent a cure, and found that it consisted of the so-called mother tincture of phosphorus, of which he was ordered to take five drops on the advent of an attack, and repeat them as occasion required.

This tincture of phosphorus is a solution of phosphorus in ether, which dissolves about one per cent., so that each dose contained about one-twentieth of a grain of phosphorus,—scarcely homœopathic according to the old-fashioned notions; *mais cela va sans dire*.

Not only was the pain relieved, but the frequency of the attacks was lessened, until from suffering a seizure two or three times a week, as he had for some years, he has now been entirely free for more than four months.

Since the occurrence of this case I have frequently employed this preparation of phosphorus, and have often found it of signal service in curing neuralgia; especially, it has appeared to me, in those subjects who add to a highly nervous temperament some cause of nervous waste; so that I have considered it probable that the neuralgia has, indeed, in these cases been, as Romberg styled it, “the cry of the hungry nerve for blood,” or, rather, for its own special pabulum in the blood, and that the phosphorus has directly supplied this want. I have also employed pills of phosphorus melted in suet, and coated with gelatine, a preparation recommended by Squire when phosphorus is indicated; but I have not found them to possess any advantage over the phosphoric ether, while they possess the disadvantage of being difficult of preparation, and the universal pillular drawback of doubtfulness of destination, whether of absorption into the blood or of excretion by the bowels.—*S. M. Bradley, in Lancet.*

CROTON CHLORAL.

DR. J. W. LEGG has been using this substance in St. Bartholomew's Hospital, London. He says: I gave it to about twenty persons, nearly all women. They varied in age from seventeen to forty-four. They were all suffering pains in the regions supplied by the fifth nerve,—that is, the upper and lower jaw, the face, and the supra-orbital region of the forehead. The pains were paroxysmal. In the majority of the cases they were increased at night. In nearly every one of these cases there was caries of the teeth. In about half there were signs of anæmia. The medicine was given in doses of five, ten, and twenty grains,

dissolved in water. It was given at night, just before going to bed. In one case, where the pains became aggravated at noon and at bedtime, it was given just before the increase of pain was expected. In all the patients, except two, great relief from pain followed the dose of croton chloral. Some of the patients said that they slept well after it; others, that they did not sleep, but that the pains in the head and face either ceased altogether, or were much diminished. In two cases, both women, the croton chloral was of no use whatever, the pains being aggravated during the use of the medicine; but in the rest of the cases more or less relief was given.

Should the croton chloral be as efficient in the hands of others as it has been in mine, it will prove a most important addition to the *materia medica*. It will enable the physician to give relief from pain until relief can be afforded by the dentist, or by attention to the general health, and this without any of the general effects of narcotics. It is almost unnecessary to dwell further upon the advantage of possessing such a means.—*Lancet*.

TREATMENT OF PARAPLEGIA DUE TO EXCESSIVE VENERY.

THE following is extracted from a report, by Dr. Parish, of a clinicial lecture on chronic myelitis by Dr. H. C. Wood, Jr., as published in the *Philadelphia Medical Times*.

The form of paralysis due to excessive venery is usually that of paraplegia accompanying inflammatory softening of the cord. I have never seen a case of sclerosis thus caused. With the different stages of congestion and exhaustion, or of inflammatory change, there will be more or less marked aberrations of sensation and motion, or, in other words, more or less complete paralysis.

If you have a patient with the earlier of these symptoms, what shall be your treatment? Of course an essential part of it must be the avoidance of the original cause; for otherwise the medicinal treatment will be of no avail. The best way to effect this is to send your patient alone on a tour for a few weeks, if he be well enough. At any rate, insist upon his sleeping in another apartment from his wife, if married; as the only method of maintaining the necessary absolute abstinence is to keep out of the way of temptation.

There are some who recommend ergot in such cases, saying that it produces a contraction of the smaller blood-vessels and thus relieves

capillary congestion. Most probably it does have this effect; but I have obtained better results from the use of phosphorus than from any other remedy. As already insisted on, when the patient applies for relief the congestion has ceased to be an active one, but is passive and attended with exhaustion. Phosphorus is believed to stimulate the circulation of the cord, and to thus relieve the passive congestion. Whether this be true or not, I feel very sure that it influences the nutrition of neural structures to a greater extent than any other known drugs, not excepting strychnia. The latter is a powerful functional motor stimulant, but its power of influencing the nutrition of the cord is comparatively slight. Do not give phosphoric acid and think you are giving phosphorus. If you wanted the effects of sulphur, you would not give sulphuric acid. Be careful, too, in administering phosphorus in the pill form. Remember that the least particle of solid phosphorus coming in contact with the stomach will produce an ulcer—a not insignificant complication. Dr. Percy, of New York, has lately suggested cacao butter as a suitable vehicle. I have not put this suggestion to the test, and hence am unprepared to pronounce on its value. I have generally used an oily solution: phosphorus gr. xij. in ol. olivæ f ʒ i. Of this I begin with one minim in mist. acaciæ, and gradually increase it to three or four minims thrice daily. The effect on the stomach must be watched; and if dyspeptic symptoms show themselves you must suspend its use. This drug will be found of considerable value in other cases of perverted nerve-nutrition, such as hypochondriasis and hysteria.

Electricity is another remedy that must not be neglected in the treatment of the various degrees of paralysis following excessive venery. It is, however, doubtful if an electrical current ever reaches the spinal cord. When passed along the spine, it never produces the least muscular movements; and yet if the cord of an animal be exposed and the electrodes be applied directly to that structure, violent muscular spasms will immediately occur.

There seems to be but little doubt, however, that a continuous electrical current passed along the spine is attended with positive benefit; but the good it does is most probably due to a reflex influence on the cord.

I am very much in doubt as to the possibility of galvanizing the sympathetic nerve when unexposed. Our attempts are never attended with any of the symptoms of irritation of that structure. The pupil has never thus been made to dilate; and it is hardly reasonable to suppose that any contraction of the blood-vessels takes place, as in all experiments on the lower animals the pupil has dilated *before* the blood-vessels became contracted.

In addition to the continuous current to be passed along the spine, at the individual muscles be faradized. Sometimes you will find the muscles to respond more decidedly to a slowly interrupted or to a continuous current. I have found that this current acts most forcibly upon the muscles when, instead of being simply interrupted, the currents are quickly reversed, by means of a pole-changer, at intervals of from one to a few seconds. In this way I have often been able to get a very active response in cases in which the induced current failed entirely, and the direct or continuous current applied in the ordinary manner produced only very slight results.

There is a simple rule in making a choice of the kind of current. Use a continuous or an induced current, as the one or the other produces the most muscular response. The muscles should also be daily rubbed and thoroughly kneaded, and stimulant embrocations may often be employed with advantage; and as soon as your patient can walk, even with crutches, cause him to exercise himself thus daily, but not to such a degree as to produce fatigue.

TETANUS AND ITS TREATMENT.

MR. C. MACNAMARA, Surgeon to the Native and Ophthalmic Hospitals, Calcutta, says:—

In June, 1871, I adopted a plan of treatment in tetanus which I have since consistently followed, both in Hospital and private practice. It consists in administering forty grains of hydrate of chloral (to an adult) at bed-time, and in several cases of the disease—the temperature of the body rising to upwards of 101° —an additional thirty grains of chloral is given at mid-day. The patient is made to swallow regularly every four hours about four ounces of milk, one egg being mixed with the milk, morning, noon and evening; if the pulse indicates considerable weakness, beef-tea and brandy are substituted for the milk, but it is seldom necessary to administer food of this description. Milk and eggs, with arrow-root as the patient improves, is the diet which I almost uniformly order, it may be for twenty or twenty-five consecutive days. By pursuing a plan of this kind I came to learn that tetanus (among the natives of this part of India) is by no means so formidable a complaint as it was generally supposed to be; it has undoubtedly a tendency, as we have long known, to run a course of some twenty or twenty-five days; and further, if we can only carry our patient through the first ten days of his illness, as a rule, a very favorable prognosis may be given of his recovery.

Of the twenty cases of tetanus above referred seventeen have recovered under this treatment; result, I believe, in the annals of the disease were not picked; they were taken one after the other into my wards, and constituted the entire number. June, 1871, to June, 1872, suffering from the disease Native Hospital; some of them seemed in a desperate condition when first admitted under my care. I still think that chloral has been of great service in diminishing the severity of the fits in tetanus, but it does not render them less frequent, affording the patient rest and time for sleep; and this, together with a diet such as above noticed, has brought about the remarkable result of seventeen instances of recovery out of twenty cases of tetanus.

I am strongly opposed to the system of frequently repeated doses of chloral in tetanus, however violent the spasms, if the temperature of the body keeps below 101°: only one draught containing forty grains of this drug should be given; and I feel almost certain that, however bad the case may be, if an extra dose of thirty grains of chloral is administered during the day, we gain all the advantages in the treatment of tetanus that chloral can afford us. It seems that if the medicine be pressed further it is likely to endanger the patient's life, and a too prolonged sleep has appeared from time to time to be followed by a tetanic fit of such extreme violence as to kill the patient. It does not of course follow that because forty grains of chloral only puts a patient suffering from tetanus to sleep for a few hours we are to repeat the dose too soon; rather allow time for the drug to pass out of his system or become otherwise disposed of before again administering the medicine, otherwise the chloral or its derivatives may accumulate in the blood and ultimately poison the patient.—*London Practitioner*, Nov., 1872.

FARADIZATION FOR THE ALBUMINURIA OF DIPHTHERIA.

DR. R. BROWNING has a paper on Diphtheritic Albuminuria (*British Medical*, July, 1872), in which he gives the details of seven cases, and concludes as follows:—

f. That albuminuria, in any quantity, is due to obstruction of circulation through the kidneys, caused by congestion of the Malpighian tufts, this congestion being produced by paralysis of the nerves supplied to them; but that a mere trace only arises, either from pus or else blood-corpuscles, which have casually entered the volume of urine.

g. That the indication of treatment, in albuminuria occurring to an appreciable degree during the progress of a case of diphtheria, is to remove this obstruction by overcoming the paralysis, and that local Faradization (over the lumbar regions, along the lower parts of the spine, and as near as may be in the direction of the ureters) affords the best method of doing so.

h. That, after albumen has disappeared from the urine, it may return, synchronously with a relapse of diphtheria; and that throughout the whole course of this malady little, if any help, is derived from the use of the clinical thermometer.

Both the cases which terminated fatally were those in which no Faradization was employed, and *five* others, all of very serious nature, recovered after it was resorted to; *all* were marked by unmistakable evidence of blood-poisoning, and albuminuria, with more or less suppression of urine, was noticed in each. The treatment of all was conducted on the same principle, *plus* or *minus* the induction-coil; the object aimed at being at first, during the premonitory symptoms, to regulate the secretions, and then to support the strength of the system in every possible way. My sheet-anchor was the tincture of perchloride of iron, sometimes combined with glycerine, sometimes with chlorate of potash, and sometimes given *per se*. Stimulants and nourishment in every variety were freely given.

BELLADONNA IN SWEATING.

DR. SIDNEY RINGER has a paper on the above subject in the *London Practitioner* for August, in which he commends most highly the use of belladonna both locally and internally. He says, *inter alia* :—The writer has many times checked the sweating of the head and face of young children, often so profuse as to soak their hair and the pillow on which they have been sleeping. Again, belladonna, by means of the ointment or liniment rubbed in two or three times a day, has several times checked the profuse sweating of the hands, which is sometimes so copious as to run off them in drops, and is especially noticeable at the finger-tips and thumb-balls. Sometimes the good effects are permanent, sometimes the sweating may not return for a considerable time; but occasionally, however, this treatment fails.

Some very striking experiments are detailed, among them the following :—To a middle-aged woman suffering from acute rheumatism, a hot-air bath was administered, followed by cold sponging. This treatment caused her to sweat so freely that, for several hours after, the perspiration continued to pour down her face, soaking her clothes

and the bed-linen. While in this state, $\frac{1}{16}$ of a grain of atropia was subcutaneously injected into her arm, and in about a minute the perspiration ceased, and for two hours her skin continued dry and she felt much cooler, but in the evening rather free perspiration returned. We next gave a young man a Turkish bath, and Mr. Johnson, the resident assistant of wards, who has helped me in these observations, joined him in the hot chamber. Both sweated freely, and then each was injected with $\frac{1}{16}$ of a grain of atropia, and in a little more than a minute the skin became dry, and the perspiration did not return after the application of the cold douche, nor afterward. Mr. Johnson remarked that, so dry did his skin seem, that he felt he should never sweat again. They both suffered from much dryness of the mouth, but their pupils were not dilated. We next placed a boy in the hot-air bath, the temperature rising to 180° Fahr., and when sweating freely we injected $\frac{1}{16}$ of a grain of atropia, and almost immediately the sweating ceased and did not return.

THE TREATMENT OF ACNE.

ON October 17, of last year, Dr. L. D. Bulkley read a paper before the New York Academy of Medicine on Acne, which, with the subsequent discussion, was published in the December and February numbers of the *American Practitioner*. From these the following is taken:—

Dr. Bulkley says:—I feel that I can not too strongly insist on this, that the very large proportion of cutaneous affections, and acne most of all, are but diseases of the whole economy, and should not be studied exclusively from a local point of view.

The various forms of acne require somewhat different treatment, although most of these are but modifications of one plan to suit the slightly different local states. The plan is a regulative and tonic treatment internally, inducing as far as possible a perfect working of the bowels, kidneys, skin, and other organs; supplementary to which the local treatment should be soothing in acute inflammatory states, and slightly stimulant and astringent in others. The first obstacle, the removal of which is absolutely necessary for the cure of acne, is constipation.

This constipation must be overcome; for, as Tilbury Fox expresses it, "this preparation is a *sine qua non*." And this is to be accomplished not by purgatives, in the vulgar sense of the word—for these sometimes have a very injurious effect on acne, the eruption becoming

worse as the bowels are more and more irritated by stimulating cathartics, an effect which I have seen also in eczema—but by a careful employment of all the means at our command, by medicine, and far more important, by diet, exercise, and regularity in attending to the calls of nature. Regular daily exercise in the open air, always short of fatigue, is well-nigh essential; and this I find to be one of the most difficult points to carry, but one which always gives the best results. But generally some medicine will be called for to assist in this process, but all laxative medicines should be discontinued as soon as possible; their continuance and abuse being one of the grounds why the internal treatment of acne has fallen into disrepute. The remedy I have had most success with is a pill containing one-half a grain of extract of aloes and one grain of dried sulphate of iron, with a little confection of roses. A small quantity of opium or belladonna may be added if it gives pain. One of these pills is given after eating, sometimes two being required after the noon meal. In a few days the bowels are loosened; and if the pills be continued at this rate a diarrhoea will generally ensue, succeeded, when they are withheld, by constipation, and any benefit derived from them will be lost. The frequency with which the pills are given, after the bowels become at all lax, must depend on the frequency of the evacuation. We usually omit first the noon pill, then the morning one, and soon the patient takes one but every other evening; finally, *one* taken once a week, or once in two weeks, will have considerable laxative effect. Should they be required again, the same process of accustoming the system to act without them should be followed. Taken in this way the pills will often correct menstrual difficulties, except, of course, when dependent upon mechanical causes, as displacements, version, etc.

Another remedy which has been followed with success, rather in my father's practice than in my own, is Kissingen water, and I would mention Hanbury Smith's in particular. This is given, one-half to one pint, before breakfast daily, or it answers well if taken in the middle of the forenoon. I do not consider that the benefit derived from this water is wholly owing to its purgative properties; for with many these are quite weak, and the improvement following its employment seems not at all proportioned to its action on the bowels, though its ultimate effect is to leave them regular.

Most cases require an immediate laxative, and one of the best I find to be the old pill of two and a half grains each of blue mass and compound extract of colocynth, with a quarter of a grain of powdered ipecac; two such to be taken alternate nights for a few times, followed by Kissingen in the morning, and surely nothing I know of makes more impression on some cases of acne for the time being.

But a second element, quite as important in the treatment of the disease before us, is *dyspepsia*, which enters very largely as an exciting cause in all dermal affections. This is in many cases dependent on, or conversely productive of, the last condition considered—constipation—and is often remedied by the treatment already given.

The dyspepsia associated with acne is mostly of the acid kind, and this is to be met in two ways. First—and this is by far the most important—by a proper regulation of the diet. In this the patients will require a large amount of instruction and watching. The most essential restriction in this respect is in the use of starch and sugar in all their forms, and for this suggestion I am indebted to my friend, Dr. William H. Draper, of this city. The advantages gained by moderation in the use of these principles I have verified again and again in practice; so that now it is almost a routine direction to patients with acne that they limit themselves in the use of farinaceous and saccharine substances, and I find that they are frequently relieved of much annoyance thereby, and are very grateful for the advice. With these articles I also proscribe totally the use of wine in any shape, and all fermented liquors—ale, lager-beer, etc.—as these, I believe, assist largely in the acid state of the system so common in these subjects. I do not think it is the alcohol in these beverages which does the mischief; for although acne is often attributed to the abuse of liquor, and the rosaceous form is common in drunkards, we know that their digestive organs are generally at fault; also that those who drink the most gin are quite apt to drink ale besides. It is, I am led to conclude, the fermentative principle—the starchy product in the one instance, and the saccharine in the other—which is lost after distillation; and I have repeatedly known alcohol to be borne well when vinous and malt liquors have increased the difficulty. So that when stimulation is necessary I do not hesitate to give alcohol, either in bitter tinctures or brandy or whiskey (when it is safe to prescribe them), in small quantities, *with the meals*; but on no account do I allow ales or wines to be used. One of the worst cases of acne indurata I ever saw was in a lady who had for some time been taking ale with cod-liver oil, by the direction of her former physician, with great increase of the eruption. Now cod-liver oil alone will benefit acne as a rule. I have never known it to aggravate the disease. A gentleman, aged about sixty years, somewhat given to the use of port wine, came under my care for acne rosacea of the forehead. Treatment proved unavailing until the wine was abandoned, when the eruption disappeared under the same measures as before; and he has had no return of his trouble for more than a year, he abstaining from wine, but with no other treatment.

Coffee in large quantity, and tea drank to excess, has some effect in

heightening the disease ; but a very moderate use, especially of the former, is beneficial. Chocolate and cocoa are exceedingly hurtful, and should be interdicted. Among other articles which I find noted as having produced exacerbations or even returns of acne are pastry, fried substances, salted meats, pickles, sweet potatoes, macaroni, and milk—this latter, however, only exceptionally. In one patient strawberries and pine-apples occasioned a severe outbreak of a very dormant acne rosacea.

Electricity, so far as it cures the dyspepsia, is beneficial in acne ; but, from what I learn, has not been of service when applied directly to the eruptive surface, but in some cases the reverse.

I do not think that this disease is benefited in its early stages by arsenic or cantharides, but know the reverse to be true in certain cases. I do, however, value arsenic very late in the disease, when the eruption is about gone, to secure a perfect result ; for I believe it gives tone and vitality to the skin, which enables it to secrete and pour out its sebaceous matter in a proper manner.

Much improvement is obtained, for a season, from the acetate of potassa with a bitter infusion, taraxacum or rumex, three times a day, between meals, largely diluted. But this must be followed up by tonics, together with regulation of the diet, exercise, and bodily functions, to be permanently useful. The mineral acids are very serviceable, and iron, nux vomica and bark, with small doses of arsenic and a proper local treatment, are necessary to complete the cure. I say cure rightly, I believe, for the disease can be removed, and if proper precautions are observed need not return, in many cases at least. Cod-liver oil and iodide of iron are required in the scrofulous, and a mild mercurial course will at times remove the eruption after the failure of other means. This is, of course, necessary in true syphilitic acne.

I have used the glycerine treatment recommended by Gubler, of Paris, in one case with remarkable success. Three other patients are taking it, whom I have not seen since I prescribed it for them, quite lately. It is simply one, two, or more teaspoonfuls of pure glycerine, colored and flavored, given internally three times a day after meals, no other treatment, internal or external, being employed, nor any restriction in diet. No satisfactory explanation of its action has yet been given.

As to local measures, many patients were treated almost exclusively with the means above described, topical applications being entirely secondary. Unquestionably, however, we can do much in hastening the cure by some of the washes and ointments with which the books abound. My favorite local application is a wash consisting of a

drachm each of sulphuret of potassium and sulphate of zinc in four ounces of rose-water. It is useful in almost all states and forms of acne, although it sometimes disagrees. The lead and opium wash acts very pleasantly when there is much inflammation present, and the iodide of lead in stramonium ointment serves well to reduce the thickening of the tubercles of acne indurata. I have seen improvement follow the application of citrine ointment thrice diluted with cold cream. I have applied collodion to endeavor to contract the dilated veins of acne rosacea, but without lasting effect. I have also laid open the veins in the same form with good results in some cases. I do not find the benefit I had hoped from bichloride of mercury wash. Juniper-tar soap is very useful in acne sebacea, punctata, and indolent forms of acne simplex.

It is best to press out the plugs of sebum from the comedones as much as possible, thus avoiding foci of inflammation; also to open such nodules as contain an appreciable amount of pus early, otherwise the tissue is destroyed subcutaneously and scars left.

After Dr. Bulkley had read a synopsis of his paper on acne, Dr. Weisse, who was called upon to open the discussion, said:—

As to the treatment of simple acne, it is most successful in early life; but must be continued, as a rule, four or five years—certainly till after the age of twenty—to make the cure permanent. Emptying the distended follicles he regarded by far the most important element of treatment. This is to be done after the application of very hot water to the face, three times a day, for ten or fifteen minutes. Soap should be avoided, as also too frequent ablution.

Acne rosacea, he stated, is frequently dependent upon sexual difficulties, and is often cured by marriage. The use of fatty matter should be encouraged, and this may be added to the diet or given as medicine, as half a pint of cream daily, glycerine, cod-liver oil, or even olive oil. As local applications, Dr. W. advises any greasy application, even simple suet, scented, to be applied at night after the hot douche, followed by squeezing the masses from the follicles. In the morning the fatty matter is still left on, the face not washed, but a powder of equal parts of subnitrate of bismuth and prepared chalk is dusted on, and removed by lightly brushing the face. Hebra employs a very weak ointment of the bichloride of mercury. The speaker had also used an ointment as follows:—

℞ Pulv. camph., gr. v.
Sulph. flor., 3 ss-i.
Ung. simpl., ʒ i. M.

He considers acne rosacea thoroughly amenable to treatment. He

had pressed arsenic to a toxic effect, and kept it up for six weeks, without any benefit in this disease. He had seen, however, good effects from the cod-liver oil.

Dr. J. C. Peters said arsenic is injurious in the acute inflammatory stages, and is only useful in long-standing and torpid cases. He esteems acetate of potassa as one of the most useful remedies in this disease; borax given internally being almost as good, and having this advantage, that it may relieve amenorrhœa at the same time. Borax is also valuable externally. He has seen good results follow the internal administration of tar, five to ten grains, with aloes. Sulphur given internally is also serviceable in some cases. Muriate of ammonia assists at all times by its action on the liver. Sulphate of potash and corrosive sublimate are injurious in acute cases. He had been disappointed in the wash recommended by Sidney Ringer, composed of lac sulphur, 3 i.; glycerine, 3 i.; aquæ, 3 iv.

Dr. B. Howard said his indications for treatment were: keep the skin of the whole body, especially the face, soft and flexible, to give free exit to the sebaceous secretion. Constipation is an important element, and must be avoided. His favorite remedy, which he would recommend very highly, and which he almost considered *the remedy*, was bitartrate of potash. This is to be given, morning and night, in sufficient quantity just to secure a free action of the bowels—often about half a drachm. He has also seen good success from rhubarb and soda powders. He is very careful about giving arsenic in these troubles.

Dr. E. L. Keyes said the treatment, he thought, should depend upon the cause, taking largely into consideration the scrofulous and gouty diathesis. When a gouty habit of body exists, continued exercise is very necessary. Arsenic is useful only when it is well digested; it aggravates some cases. Locally, he uses hot water, with an alkali, as bicarbonate of soda, a drachm to the pint, rubbing the face afterward violently with a soft towel. Bichloride of mercury is favorable in mild cases, in strength varying from one to two or even five grains to the ounce. Benefit may also be obtained from a solution of half a grain to the ounce.

The speaker, however, dwelt much more on the internal cause of acne, intestinal and stomach derangement, and the consequent necessity of judicious medical treatment, emphasizing the value of out-door exercise. He places much less faith in local remedies.

Dr. R. W. Taylor said as to treatment, the acetate of potash regulates the stomach troubles very well, neutralizes the urates, etc. Locally, he thinks that active stimulation is required; and regarded the want of success following Dr. Sidney Ringer's sulphur lotion, as mentioned by

Dr. Peters, to be due to the fact that it was applied too lightly ; it should be rubbed in. He is in the habit of using the following :—

℞ Potassæ fusæ, 3 ii.
Aquæ, ℥ iv. M. ft. lotio ;

to be sponged over the face, allowed to dry in if not too painful, and washed off with very hot water ; then rub in an ointment, as

℞ Hydrarg. biniodid., gr. v.
Ung. simpl., ℥ i. M.

Or,

℞ Hyd. ox. rub., 3 ss.
Ung. simpl., ℥ i. M. ft. ung.

He has also seen good results from iodide-of-sulphur ointment ; also frictions with the green soap of the Germans, applying cold cream after washing it off. The following is also a favorite prescription with him :—

℞ Lac sulphuris, 3 ij.
Spts. camphor, 3 ij.
Aquæ, ℥ iv. M.

The lotion to be rubbed well in with flannel at night, washed off in the morning, and a little cold cream applied.

Dr. T. called attention to what he considered rather an unusual form of acne, in which there were small papular elevations, quite salient, about one eighth of an inch in height and breadth, around the mouths of young women. They are associated with an hypertrophy of the fibrous tissue. These he had found very rebellious to treatment, but had removed them by destroying the whole mass, boring them from the apex with a stick of Squibb's pure nitrate of silver. This leaves a minute scar, which, however, is less than that resulting if the eruption is left to itself. He had tried the actual cautery, but not with as good effect as the nitrate of silver. The speaker did not think that acne was commonly associated with sexual troubles in young women.

Treatment of Acute Odontalgia by Sub-Cutaneous Injection.—Dr. G. Dop commends most highly the hypodermic injection of chloroform in acute odontalgia and periodontitis. He introduces the point of the syringe as close as possible to the root of the offending tooth, parallel to the jaw and close to the bone ; by a turn of the piston screw one drop, or at most two drops are injected. The relief is almost immediate, and lasts 18 to 20 hours.—*Revue de Théra. Méd. Chir.*

ON THE ACTION OF CABBAGE-LEAVES ON ULCERS
AND DISEASES OF THE SKIN.

DR. BLANC has published in some late numbers of the *Revue de Thérapeutique* a very long memoir on the above. Space would fail us to reproduce it, but we believe it would interest our readers if we introduced to them at least his conclusions.

Moreover, he works with an external therapeutic agent so easy to obtain that its name alone is sufficient to arrest the attention of medical men.

This memoir, Dr. Blanc says in closing, establishes sufficiently how useful the cabbage-leaf is in many cases of cutaneous disease, by actions new in a practical as well as a theoretical point of view. These facts have their laws. I will formulate them as I understand it in the following propositions:—

1. The cabbage-leaf excites and augments suppuration or the secretion of ulcers, ulcerations, vesicles, and pustules. It has the same action on the integuments affected by an erysipelatous or furunculous inflammation, but recovers tissue in a morbid condition.

2. This augmentation of suppuration is constantly followed by an amelioration and often by a cure. It is the condition necessary to the result, and the property of the leaf which determines this result is an indirectly curative property.

3. This property does not consist in any principle which the leaf yields for absorption, but rather in an affinity which the leaf has for the vitiated secretions.

4. The leaf exercises this affinity on open ulcers, or on ulcers covered by a thick or thin scab or crust; it exercises it on the thickened epidermis or where it is converted into thickened rind-like membranes; in simple or confluent variola, throughout mortified tissues, through the integuments, whether inflamed or non-inflamed, but recovers tumors capable of absorption.

5. When the tegumentary affection is wide-spread or general, the action of the leaves on the parts where they are applied benefits the whole disease.

6. The matter in the parts not covered by leaves is absorbed, and at once directed under the leaves to be immediately excreted at that part.

7. Treatment by the leaves of a suppurative affection prevents reabsorption and consequent pyæmia.

8. The cure obtained by this means is more complete and certain than by any other, because it is brought about only when the cause and products of disease are eliminated from the system.

9. This mode of treatment is in perfect harmony of action with the *vis medicatrix naturæ*. This essays in skin diseases to eject from the system their cause and effects, whilst the leaves aid this action.

10. The cure of an ulcer by the leaves, however wide-spread and long-standing it may be, is without danger, and relapse is very rare.

11. The cicatrices obtained by the leaves are remarkable for their small degree of deformity.

12. Small-pox, measles, and scarlatina treated by applications of the leaves have few or no sequelæ; *e. g.*, phthisis is not to be feared.

13. The cabbage which is employed externally and in the natural condition cannot, at the time, yield to the organism any principle capable of neutralizing the cause of a malady and destroying its effects; and since the cure operates by suppuration and secretion, induced and stimulated by the leaves, we must conclude—

1st. That in case of a cure the cause of the disease has been excreted by secretion or suppuration.

2d. That some diseases have for their immediate cause a vitiation *sui generis* of the fluids.

3d. That the *vis medicatrix* proceeds to the cure of these diseases by driving the vitiated matters towards the tegumentary covering where it spreads them, eliminating them afterwards by vesicles, pustules, or the excretory vessels on the inflamed or ulcerated surfaces.

14. These operations take place in a diseased body; they are then diseased functions, functions which have the integuments for organs; the integuments modified by inflammation, either simple, vesicular, pustular, or serous.

15. The leaves are the auxiliaries of this function; they attract it out by their affinity for vitiated fluids.

16. This elimination accomplished, the means which have served for it, I should say the modifications of the integuments, being no longer required, disappear; they are cured.

17. This mode of cure, this treatment, I would call a cutaneous depuration.—*The Doctor*, Feb. 1.

ELIMINATION OF ALCOHOL.

DR. DUPRE has renewed some experiments on this subject and concludes—

1st.—The quantity of alcohol eliminated daily does not increase with the continued ingestion of alcohol.

2d.—The elimination of alcohol, after the ingestion of one or more doses, ceases from the ninth to the twenty-fourth day after the ingestion of the last dose.

3d.—The quantity of alcohol eliminated by the kidneys and lungs is but a very small part of that ingested.

In the course of his experiments the author found, that after six weeks of total deprivation from alcoholic drinks, and even in one individual who completely abstained from alcohol, that the urine contains sometimes a substance which is not alcohol, but which presents the characters by which we generally recognize alcohol. This body passes over among the earliest products of distillation, gives acetic acid on being oxidized, reduces the bichromate of potash when dilute sulphuric acid is present, and its aqueous solution has a lower density than water. It furnishes iodoform, and exists in the urine in a very small quantity. —*The Doctor*, Feb. 1.

BORAX AND THE NITRATE OF POTASSA IN THE LOSS OF VOICE FROM "COLDS" IN PUBLIC SPEAKERS AND SINGERS.

DR. JOHN W. CORSON, of Orange, N. J., states (*Medical Record*, Jan. 1, 1873):—

"1. That in sudden hoarseness or loss of voice in public speakers or singers, from 'colds,' relief for an hour or so, as by magic, may be often obtained by slowly dissolving and partially swallowing a lump of borax the size of a garden-pea, or about three or four grains, held in the mouth for ten minutes before speaking or singing. This produces a profuse secretion of saliva, or 'watering' of the mouth and throat. It probably restores the voice or *tone* to the dried vocal cords, as just 'wetting' brings back the missing notes to a flute when it is too dry.

"2. Such 'colds' may be frequently 'broken up' at the very commencement; and this restorative action of the borax to the voice may be materially aided by promptly taking, the evening previous to a public effort, dissolved in a glass of sweetened water, a piece of nitrate of potassa or 'saltpetre' a little larger than a garden-pea; or about five grains, on going to bed, and covering with an extra blanket. The patient should keep warm next day. This both moistens the dry throat and further relieves the symptoms of 'cold' and slight blood-poisoning from suppressed perspiration, by reopening the millions of pores of the skin, more or less closed by cold.

"3. These remedies have the three recommendations of being easy to obtain, convenient to carry in travelling, and perfectly harmless.

"4. They are nearly or quite useless in the actual cure of long-continued chronic disease of the throat, or acute inflammation or 'tonsillitis,' both of which require other appropriate treatment."

ON THE ACTION OF SUBCUTANEOUS INJECTIONS OF EXTR. SEC. CORNUT. AQ. IN FIBRO-MYOMATA OF THE UTERUS.

BY PROF. HILDEBRANDT, KOENIGSBERG.

IN nine cases of large fibroma of the uterus, which the author treated with subcutaneous injection of *secale cornutum*, he attained, in one instance, a complete cure, and in five cases decided improvement, viz.: reduction in the size of the tumor, and subsidence of the aggravating symptoms, especially the hemorrhage.

The management is as follows: Of a solution of 3 grm. extr. *secale cornut. aq.* in 7.5 grm. each of glycerine and water, a syringeful is daily injected. This procedure may take place at the home of the patient. Prof. H. found that the skin at the lower part of the abdomen is more appropriate than in the region of the umbilicus; after 10 to 15 injections the ergotin solution passes easily out of the opening, therefore some cotton batting with collodium should be applied.

The greatest number of injections made use of in one case was 120; in two cases the ergotin injections could not be made use of—in one case on account of the severe pain, in the other on account of manifestations of intoxication.

This observation of Hildebrandt is of great importance, and can be strongly recommended for further proofs. The explanation he gives as to this action is as follows: Probably an insufficient nutrition of the tumor takes place, partly by the contraction of the vessels supplying the same, partly by the compression (by the uterine walls), this insufficient nutrition gradually leading to fatty degeneration and resorption of the tumor.

Gleet treated with Medicated Bougies.—G. Lörey gives the results of eighty cases of gonorrhœa and gleet treated by this means. The cases of gleet, twenty in number, were all cured in a short time; the longest course included twenty-two bougies, one a day, and the

shortest three bougies, the average being nine. The author observes that these cases, being treated in a hospital, doubtless derived benefit from the regular life there; it is not uncommon for a gleet to be greatly exacerbated by a long walk, slight excess in drinking, or a single act of coition. The bougies used were seven and a quarter inches long—*i. e.*, about the length of the urethra—and from one-eighth to one-sixth of an inch in diameter. The centre was of gelatine, the outside of gum arabic mixed with the medicine, three-fourths of a grain each of sulphate of zinc and belladonna. After being dipped in cold water, they are easily inserted. In the sixty cases of gonorrhœa, no such startling results followed. The bougies served as well as the ordinary injections to cut short the disease—no better. But for two of the incidents of gonorrhœa, pain in making water and nocturnal erections, bougies medicated with opium (three-fourths grain), or opium and belladonna (āā, three-fourths grain), acted admirably. Put in at night, they insure comfortable rest and easy micturition in the morning. It has been urged that, like permanent bougies, they might produce orchitis; but they are dissolved in the course of an hour and a half; and no orchitis occurred in any of the eighty cases observed by M. Leroy.—*Annales de Dermatologie et de Syphilographie*, November, 1872.—*New York Medical*.

Treatment of Psoriasis (*La France Médicale*, January 15, 1873).—Psoriasis is not in itself a serious disease, says M. A. de Montméja, but it is obstinate, and those who have once been affected by it are very liable to relapses. It is often hereditary, manifesting itself only when the adult period is reached, after which it may be either intermittent or inveterate. In the present state of our therapeutical knowledge, we must not imagine that we can effect a radical cure of psoriasis; we may clear the skin, or hasten the evolution of an attack, but it is impossible to prevent relapses. The treatment is divisible into that by local and general means. The general treatment consists in the administration of mild and frequently repeated aperients, and of arsenical and sulphuretted preparations, as well as of those containing cantharides. M. Hardy prefers small doses of the arseniate of soda to the other preparations of arsenic. M. de Montméja has obtained considerable success from the employment of two drops of tincture of cantharides in a glass of eau sucrée, the dose being increased up to thirty drops per diem. Its use, however, requires extreme care and vigilance. Copaiva is sometimes very useful when given internally. In addition to these means, the waters containing sulphur, of Saint Honoré-les-Bains, Baréges, Aix-en-Savoie, may be tried, especially in inveterate cases. The local treatment that is found most beneficial is

the application of vapor baths, and either warm alkaline or sulphurous baths, with ointments containing the empyreumatic oils. It is rare for sulphuretted oils to prove of any service, and if mercurial ointments are used, care should be taken when the scabs have fallen off, lest salivation be induced. The oil of Cade, with three parts of lard, is very useful.

ON THE TREATMENT OF POISONING BY THE POISON IVY OR POISON SUMACH.

DR. JAMES C. WHITE has an elaborate article on the action of *Rhus venenata*, and *R. toxicodendron* upon the human skin, in the *New York Medical Journal*, for March, 1873. From it the following is extracted:—

Whether or not we should resort to an antidote must, of course, be determined by the length of time since the parts affected were in contact with the plant or its exhalations. How long the poison may retain its characteristic peculiarities after absorption by the skin, and how readily our antidote may follow and penetrate to it, are also matters of uncertainty. As to the nature of the remedies to be used at this stage and for this purpose, there can be, of course, no longer any question. We have to deal with an acid, and the antidote for an acid is an alkali—that is, provided the salts thus formed are not equally poisonous. Whether the salts formed with toxicodendric acid by ammonia, potash, and soda, are poisonous, Professor Maisch leaves us somewhat in doubt as the result of experiment, but speaking clinically he leaves us to believe they are not, for he says that the application of solutions of ammonia seemed to be most effective in counteracting the action of the acid. This is consistent with the popular reputation of solutions of saleratus and soda as remedies. These are true antidotes, but they can be of benefit only from their chemical action. In the later stages, or in other words, against the subsequent eczematous changes in the cutaneous tissues, they can do no good. The action of that most popular of all remedies in this affection, the solution of sugar of lead, is a mixed one, and seems to have been happily, though unwittingly, selected as an appropriate remedy in all stages. Toxicodendric acid precipitates from it an insoluble, and therefore harmless salt, while its astringent action is well adapted in many cases to the relief of the inflammatory processes in the skin.

The treatment of the later stages of rhus-poisoning, that is, of the eruption it produces, is mainly that of the corresponding varieties of ordinary acute eczema. In the great majority of cases I have found black-wash—calomel 3 j, lime-water Oj—by far the best application to the affected parts, used as an evaporating lotion upon thin and old

linen or cotton cloth, for half an hour to one hour at a time, two or three times a day. I have used in connection with it, to moist or excoriated parts, a powder of oxide of zinc ʒj, starch ʒj, or plasters of oxide of zinc or diachylon-ointment, as in the management of ordinary eczema. In the black-wash, we have possibly three elements at work in our favor: first, the alkali as antidote, if it is of any avail at such periods; second, the action of cold from evaporation upon the local hyperæmia; and third, the astringent effect of the mercurial powder upon the diseased tissues. Only upon the thickened epidermal coverings of the efflorescences in the palms does it seem ineffectual. To these tardy and well-protected manifestations I apply solutions of corrosive sublimate, from one to two grains to the ounce of water, in the same way as the black wash is used upon the other parts. By these means the eczematous process is checked and shortened, and the subjective symptoms greatly alleviated.

Ventilation and Warming.—In a lecture on ventilation, lately delivered before the Franklin Institute, Mr. L. W. Leeds, after detailing the abominations he encountered in his examination of the ventilating arrangements of the Treasury building at Washington, gives the following practical directions concerning provisions for ventilation and warming in the construction of buildings. First, never have long underground fresh-air ducts. Second, never allow a sewer, soil-pipe, foul-air flue, or smoke-flue, to come near the fresh-air supply-flue, for fear of some connection being made between them by carelessness or accident. Third, never heat a building exclusively by currents of warm air. Fourth, always put the heating-flues on the outside walls instead of on the inside walls. Fifth, endeavor strenuously to avoid the fresh-air chamber becoming a common receptacle for all the rubbish of a filthy cellar.

Tea Adulteration.—The *North British Daily Mail* has published analyses of thirty-five samples of tea bought in different parts of Glasgow. Out of the thirty-five samples analyzed—twenty-seven of which were black and eight of green tea—only six were unadulterated. All were high-priced, and none of the six was a sample of green tea. One sample contained *no tea at all*, so far as the analyst could discover. The adulterants which were used in this and other twenty-eight cases, were iron, plumbago, chalk, china clay, sand, Prussian blue, turmeric, indigo, starch, gypsum, catechu, gum, and leaves of various kinds, elm, oak, willow, poplar, elder, beech, hawthorn and skoe. It is but justice to the retail venders to state that the adulteration is not supposed to be their work; it is largely done in China, and is further carried on after the "tea" has reached Britain.—*Boston Medical and Surgical Journal*.

Caruba di Guiden.—Under this name are largely used, for the relief of asthma, certain gall-like bodies, formed on the various species of pistacia (especially *P. terebinthus*), as the result of the stings of an hemipterous insect. According to Ignaz Hoffmann, they are used by smoking and fumigation. For this purpose they are coarsely pulverized and burnt in the bowl of a pipe, or in a dish, with some arrangement by which the fumes may be inhaled.

Preparations should be made beforehand, so that the smoke may be inhaled at the commencement of the attack.

They appear to act by exciting free secretion, probably through the turpentine with which they are saturated. They are also said to be very useful in other lung affections besides asthma, even in chronic organic diseases.—*Schmidt's Jahrbücher*, Jan., 1872.

The Bath in Small-Pox.—Dr. Stokes, Regius Professor of Physic in the University of Dublin, recommends, in the *Dublin Journal of Medical Sciences* for January, 1872, the use of the warm bath in the treatment of small-pox. He says: "We cannot doubt that the mortality in small-pox hospitals would be greatly diminished by the use of the bath." After describing a very severe case of confluent small-pox, in which the patient is kept alive only by stimulants, he said the trial of the warm bath was suggested to him by Mr. Smyly. "The effect was instantaneous and marvellous. The delirium ceased as if by magic. It was the delirium of pain; and the patient exclaimed: 'Thank God! thank God! I am in heaven! I am in heaven! Why didn't you do this before?' The fetor immediately and completely disappeared, so that, on entering the ward, no one could suppose that there was a case of small-pox in it. He was kept at least seven hours in the bath." This case, and its singular result, in addition to the experience of Hebra, justify the recommendation of the use of the bath.—*Philad. Med. Times*.

Epithelioma, treated by Carbolic Acid and Cured.—In the *Revue de Thérapeutique Medico-Chirurg.*, of March 1st, is reported a case of epithelioma of the lip, by Dr. Forné, in which a cure was effected by the local application of crystallized carbolic acid to the sore.

Dr. Boish (*Allgem. m. Centbl.*, 1870, 90 St.) recommends the use of pure carbolic acid in condylomata, which are attacked by the acid in all the thickness of their tissues, and then assume a dullish white color; the neoplasm falls entirely after a single or a few applications of the remedy, without leaving behind any ulcer. This method of treatment, says the author, is preferable to any other. The acid may be used in

a liquid form with a brush; it has no tendency to extend beyond the diseased parts. When carefully applied, it never causes any notable inflammation of the neighboring parts, nor any pain worth mentioning. It appears that this treatment is radical, for up to this time he has not noticed any relapse.—*The Doctor*, March 1.

Treatment of Phagedenic Chancre.—Mr. Pollock, of St. George's Hospital, London, invariably treats this disease by from 15 to 20 drops of laudanum every 4 hours, combined in some cases with half a drachm of compound spirit of ammonia.—*London Lancet*, Dec. 16, 1871.

Tetanus.—In the *Pacific Medical and Surgical Journal*, March 1, 1872, Dr. Clinton Cushing reports a case of tetanus, in which he thinks the successful issue was largely due to the use of morphia and chloral in combination.

Effects of Bromide of Potassium.—Dr. Julius Levy, of Berlin, writes that if bromide of potassium, in drachm doses, three times daily, is continued for months, a series of boils will be apt to be produced. He says if some preparation of cinchona be given with the bromide, no boils or other evil sequelæ will arise.—*N. Y. Medical Record*.

Nicotine in Tetanus.—Dr. E. M. Wath relates, in the *Australian Medical Journal* for September, 1871, a case of acute tetanus, marked by "terrible opisthotonos," in which he injected into the areolar tissue of the thigh half a drachm of a solution, one drop of pure nicotine in an ounce of water. The pulse immediately sank to sixty; all the muscles relaxed, except those of the neck; and presently the patient began to perspire. He fell into a sound sleep for four hours, after which he had fully recovered speech. On awaking, he said that he felt "all benumbed." He then took some wine and water, and an egg beaten up in milk. The injection was used at twelve o'clock at night. The patient awoke about four o'clock next morning. One hour later a pill of one grain of extract of nicotine of the Hessian Pharmacopœia was administered to him. He again awoke drowsy at nine A.M. Although his body felt very sore, the tetanic symptoms had ceased, and from this time his bowels and bladder acted regularly. A pill of the same extract was given for three nights following, after which the patient felt and continued well.—*Medical and Surgical Reporter*.

Effect of Bleeding on Gases of Blood.—In *Brown-Séguard's Archives de Physiologie*, February, 1872, MM. Mathieu and Urbain, in

a paper on the gases of the blood, show that bleeding has a very marked influence in lessening the amount both of carbonic acid and oxygen in the blood; *pain* also has a similar influence. The inference seems to be that both of these agents check oxidation.

Transfusion.—Dr. W. S. Playfair reports (*London Lancet*, Jan. 27) a case of transfusion in post-partum hemorrhage, unsuccessful from return of hemorrhage.

Bleeding in Pneumonia.—According to the *London Lancet*, Dr. Simorre has an essay on this subject in the *Tribune Méd.*, of Paris, Jan. 14, 1872. In it he relates a series of cases, occurring in country practice, in which the patients were bled copiously at the outset, again in four hours, lesser quantities of blood being taken at longer intervals two or three times afterwards. No other treatment but demulcent drinks were used, and the patient recovered.

Chloral as a Local Application to Chancres.—Dr. Francesco Accettella has been using chloral locally, with surprisingly good results, in the treatment of very old, obstinate chancres. He uses a solution of the strength of 1 to 4 for old cases; for less obstinate ones a weaker solution is employed.—*Revue de Thérapeut. Médico-chirurgicale*, April 1, 1872.

Tannate of Quinia.—In a communication to the Paris Academy of Medicine, March 12, 1872, M. Sistach states that in his experience the tannate of quinine is less powerful than the other salts, and must be used in larger doses, but that it is preferable, as never producing headache, or ringing in the ears, or the state of nervous excitement sometimes engendered in females by the use of the sulphate. Subsequently M. Briquet affirmed to the Academy, as his experience, that the tannate is but very partially absorbed, that its composition is variable, that it is untrustworthy, has no especial therapeutical powers, and is unworthy a place among medicines.—*Ibid.*

Local Anæsthesia in the Use of Caustics.—M. D. H. Spessa asserts (*L'Imparziale*) that if a hypodermic injection of morphia be given in the tissue to be acted on just before the application of the caustic, the latter will cause little or no pain.—*Journal de Pharm. et de Chimie*.

Calabar Bean in Chorea.—Dr. T. P. Russel says of calabar bean (*Northwestern Surgical and Medical Journal*): I have used it with great satisfaction in long-standing cases of *Chorea*. In one case, of more than one year's standing, a perfect cure was obtained.

Calabar Bean in Epilepsy.—Dr. S. D. Williams has been using calabar bean in epilepsy. About half of the cases (12 in all) were apparently benefited by the drug, the others not. It did not interfere perceptibly with nutrition, although the effect on the pulse and temperature was marked, the pulse being reduced from five to ten beats per minute, and the temperature from a half to two degrees. In many cases there was marked indolence and decided flaccidity of the muscular system. Increased action of the cutaneous glands was quite decided.

Local Application of Sulphate of Iron in Phlegmasia Dolens.—In the *Boston Medical and Surgical Journal* Dr. Crighton strongly advocates, in recent cases of phlegmasia dolens, the employment of a lotion of from twenty to thirty grains of sulphate of iron to each ounce of water, to be applied as hot as the patient can bear it.

Time Occupied in Absorption and Secretion.—In the *Dublin Medical Journal* for Nov., 1871, are detailed some experiments in which iodine was injected into a serous sac and was perceptible after 30 seconds, and very plainly present after a minute in the urine.

Nutritive Value of Canned Australian Meat.—In the *London Lancet* of March 2, Dr. S. W. D. Williams details experiments made by himself in the Sussex Lunatic Asylum upon some chronic insane patients, which show that the preserved Australian meat equals, weight for weight, fresh beef in its nutritive value. It does not appear to be, however, more than 3 cents a pound cheaper, as the cans very rarely contain full weight.

Bone Felon Arrested.—Dr. Jas. B. Walker details, in *The Medical Archives* for March, 1872, a case of bone felon cured in an early stage by the finger being put into a mixture of ice and salt until well congealed, then taken out, and, when the pain came back, replaced, and so on for two hours. On the first application of the cold there was intense pain for a little while.

Emetia.—Dr. Duckworth stated to the Pharmaceutical Association of London, that friends of his had used emetia largely in the treatment of dysentery in India, and had obtained from it all the good effects of ipecacuanha. The dose employed was from the sixth to a twelfth of a grain, with or without morphia, as the indications seemed to require.—*Pharmaceutical Journal*, March 9, 1872.

Ileus Cured by Electricity.—Dr. Michael Bogdain, in the *Wiener Medicinische Presse* of March 10th, 1872, details a case of ileus cured by electricity. He introduced one pole of an induction apparatus into the rectum, as far as he was able, and then placed the other over the spot where an intussusception was believed to exist, and passed at first a primary, afterwards a very strong secondary current, which produced very great distress and vomiting. Shortly afterwards a large quantity of wind and four ounces of clear odorless fluid were passed. After this there was no more severe pain or vomiting. During the succeeding night very profuse diarrhoea came on, which was finally checked by Dover's powder. Under the exclusive use of a milk diet, the patient speedily convalesced.

Treatment of Hæmoptysis by Atomized Perchloride of Iron.—F. R. C. S. recommends strongly (*The British Medical* of Feb. 24) the use of *liquor ferri perchloridi*, one to four of water, with the atomizer in hæmoptysis, citing an instance of cancer of the lungs.

[The *liquor ferri subsulphatis*, U. S. P., seems to me to afford the most rational and successful method of treating hæmoptysis. It should be first used of the strength of thirty drops to the ounce, and the strength be increased if needed. Generally the iron salt is very well borne, and does not excite coughing. A saturated solution of alum is less efficient than the iron, but may be used when the latter excites irritation.—Ed. N. R.]

Recovery from Psoas Abscess after Iodide of Potassium.—In the *Medical Archives* for Jan., 1872, Dr. C. Du Hadway reports a case of chronic psoas abscess in which the ingestion of two drachms of iodide of potassium was followed by immediate recovery of the appetite and healing of the abscess in ten days.

Carrots versus Tænia.—Dr. Jos. Ganghofer details, in the *Kansas City Medical Journal*, the case of a boy, æt. 3½ years, who was suddenly seized with a craving for carrots, both cooked and raw. Persisting in this unnatural appetite, and being allowed to gratify it for six weeks, he passed, on the 12th of October, a *tænia solium* of about eleven feet in length, body and head coming away at the same time. After this, the doctor being consulted, he found the little patient suffering from none of the symptoms of worms excepting a largely distended abdomen. The free use of carrots was recommended, and on the 24th of the same month another worm was passed; this time a *tænia lata*, 10 feet long, which came away entire, inclusive of the head. After the passing of this second specimen, the distention of the abdomen ceased,

and the morbid craving for carrots was lost. A few weeks later, however, a number of links again appeared in the evacuations. The child having no longer any desire for carrots, a little koussou was given, and a few more links passed, which ended the difficulty.

Aspirateur as a Means of Diagnosing Abscess of the Liver.

—Dr. Laffan details in the *Dublin Medical Journal* of March, 1872, a case of suspected abscess of the liver, in which he, at three different times, inserted the finest needle of the aspirateur into the substance of the liver. The number of punctures was six in all; the needle was inserted its full length, and the position and direction of entrance so chosen that every part of the liver was reached. No pus was obtained. A little local, very transitory, soreness, was the only symptom produced.

Glycerine as an Antiseptic.—Concerning the use of glycerine as an antiseptic, M. Luton, in the *Gaz. Méd. de Paris*, mentions some of his experiments on the subject. He found that on dipping beef and mutton and some vegetables into glycerine, and a like quantity of each into water, the decomposition was complete in the latter instance before any signs of deterioration became apparent in the former. At one time some raw mutton-chops, pieces of beef, and a whole pigeon were steeped in glycerine, and after a lapse of forty days the preservation was still perfect. The tissues had somewhat contracted; they were partly transparent and gelatinous, but still quite compact. Experiments on the same subjects, when the glycerine was diluted with water, gave similar results.—*Food Journal*.

Dried Beef Pulp.—G. Dannecy states that beef pulp, spread upon muslin and exposed to a current of warm, dry air, soon becomes converted into a brown mass, without odor, which represents five to six times its weight of raw beef; is readily eaten in sandwiches, or even diffused through soup, and possesses all the therapeutic value of raw meat.—*L'Union Pharmaceutique*, March, 1872.

Strychnia in Vomiting.—In the vomiting of hysteria, pregnancy, ovarian tumors, suppressed menses, and uterine disease, M. De-bange, in the *Lyon Médical* for Jan., 1872, commends strychnia given by the mouth and hypodermically.

Treatment of Hemorrhoids.—Hemorrhoids, connected with prolapsus, were successfully operated upon by the application of nitric acid some thirty years ago by Dr. Houston of Dublin. The method found great favor at the time, but has been somewhat displaced by the ligature, and the section followed by the actual canterly. Billroth, of Vienna, has of late revived Houston's operation, and reports excellent results, especially in those cases where frequent and dangerous hemorrhage had occurred.—*Lancet*, June 1, 1872.

TREATMENT OF DIARRHŒA AND INTESTINAL HEMORRHAGE OF TYPHOID FEVER.

In a clinical lecture, published in the *Lancet* of June 29, Sir William Gull says, *inter alia*: Medicines are only required for special conditions: for instance, if diarrhœa occur, some would give what is called "chalk mixture;" but we must remember that this has to go through about twenty-five feet of intestine. The best thing is to fill the rectum with five or six ounces of starch; it is not even necessary to put any opium with the starch. The diarrhœa only takes place when the rectum, sigmoid flexure, or descending colon is affected or irritated by acrid matters; hence, if you fill these the contact of noxious matters is prevented, and the diarrhœa checked. Time would not allow of more being said on this. If hemorrhage occur, many would give gallic acid, or tannic acid, or lead, or some powerful astringent. But do not so; "don't begin with all your great guns at once." It is best to trust to the hemorrhage to cure itself, which it will do, and keep the patient at rest in the horizontal posture, giving a little opium (half a grain) by rectum or mouth if necessary to quiet the intestines. Ice may also be applied to the abdomen. This is sound advice, although it may appear terrible. The objection to giving lead or gallic acid or other powerful astringents is that they are apt to make the patient sick, and in that manner perhaps to make the hemorrhage worse.

A New Method of Nourishing by the Rectum.—Dr. W. O. Leube states that he, after long experimenting, has perfected a method of feeding by the rectum much superior to the old plans, so that he has been able to support a patient for a month, to whom no food whatever was given by the mouth. The injection causes no pain, but rather a general feeling of *bien-faisance*. The preparation is made as

follows :—The pancreas of swine or cattle is carefully cleaned of fat, and 50 to 100 grammes thereof cut into very small pieces. In like manner 150–300 grammes of beef are prepared. Both substances are then put in a dish with about 50 to 150 cc. of lukewarm water, and stirred into a thick paste, and drawn in a clyster-pipe with wide opening. In many cases to the mixture from 25 to 50 grammes of fat may be added, also at times some starch. An hour before using this clyster one of pure water should be administered to clean out the small intestines.—*Deutsches Archiv für klinische Medizin*, March 15, 1872.

The Employment of Caustics in the Amputation of Limbs.
M. le Dr. Aubert describes (*L'Abeille Médicale*, June 17; from *Le Lyon Médical*) a method of amputating limbs and of removing tumors by the use of caustics. He uses for this purpose a leaden pipe seven millimetres in diameter, from which he removes a portion of the circumference, so as to transform it into a trough. It is then filled with caustic, and accurately adapted to the periphery of the tumor or to that of the limb to be removed. In some cases these pipes may be passed into the tissues themselves, after the manner of the drainage-tubes of Chassaignac, and in this way the constriction of the tumor or of the limb may be made more complete. The caustic which Dr. A. prefers is the *pâte de Canquoin*.

Creosote in Epithelioma.—In the *Montpellier Médical* for February, 1872, Doctor Forné reports a case, which he believes to have been epithelioma of the lip, cured by the free local use of pure creosote (carbolic acid ?).

Hypodermic Injections of Vaccine Lymph in Small-Pox.
—Dr. Robt. Grieve has tried this method, that of Mr. Hurley, somewhat extensively, and found it useless.—*London Lancet*, June 29, 1872.

A New Method of Feeding Patients with Wound of Throat.
—Mr. I. B. Scriven, having a patient who had received a wound opening the pharynx, and separating the hyoid bone and thyroid cartilages, performed tracheotomy below the original wound, and inserted an elastic catheter into the œsophagus through the latter. The patient soon discovered that on putting the open end of this tube into any liquid, the latter was rapidly drawn into the stomach, without any voluntary effort of her own. In this way, whilst calmly breathing through the tracheal tube, she would drink up a pint of soup, at first in ten minutes, afterwards in three.—*Indian Med. Gazette*.

Tetanus Treated by Bromide of Potassium and Chloral.—

In the *Edinburgh Medical Journal* for July Mr. A. Ferguson reports a successful case of traumatic tetanus. The man took for four weeks 120 grs. daily of chloral and 90 grs. of bromide of potassium (3,600 grs. of the first, 2,700 grs. of the last in all), without appreciable effect on the general system beyond transient loss of memory and the ordinary manifestations attending intoxication.

Bromide of Potassium.—It has been said that the prolonged use of bromide of potassium was injurious to the economy in many ways—notably that it caused loss of memory, diminished the appetite, reduced the weight of the body, and even predisposed to phthisis. With a view of satisfying themselves on these points, the following observations were made by the medical officers of the Sussex County Lunatic Asylum, Haywards Heath. Ten patients, four females and six males, were ordered the bromide, in doses varying from twenty to forty grains, three times a day. Their weights were taken weekly, and the effects carefully noted. It would appear from the observations that, when the bromide is given in doses not exceeding one drachm daily, it almost invariably increases the weight of the body; and that even where this dose is doubled the weight need not necessarily diminish, but rather that the chances are in favor of its increasing. The appetite was never impaired, and the functions of the secretory and excretory systems were not perceptibly affected in any instance. As regards the alleged failure of memory, no opinion could of course be formed from observations derived from insane patients; but the medical officers from whom we are quoting state that they have not, in their experience of the remedy, had any evidence in support of such a view.—*Lancet*, April 20th, 1872.

Treatment of Diphtheria by Inhalations of Sulphur.—Dr. Kieser, in the *Württemberg. medicin. Correspond.-Blatt*, 1871, No. 35, recommends strongly the treatment introduced originally by M. Barbosa. Three times a day he blows the commercial flowers of sulphur, by means of a little cone of paper (lamplighter), whose bent end is charged with the drug. He states that ordinarily three to six insufflations are sufficient, in cases seen early, to cause the disappearance of the deposit, and the cure is complete in from eight to ten days. In neglected cases nine to twelve applications are requisite, and the cure requires twelve to fourteen days. In most cases the nurses can be readily taught to practise the insufflations. In young infants a glass tube with one end fine and bent, and the other armed with an india-rubber bulb, may be substituted for the paper.—*Revue de Thérapeutique Med.-Chir.*, May 15, 1872.

Intussusception.—Dr. Taliaferro reports, in *The Western Lancet*, a case of supposed intussusception. For two days, he says, I tried the most active purgatives and enemata without any effect; remedies were also used for allaying spasm of the bowels; she suffered intense pain over the whole abdomen, but there was no vomiting. A pint of water with two drachms of soda, and the same amount of water with a drachm of the acid, were alternately introduced into the rectum. In an hour there was a copious evacuation from the bowels, and the woman had no further trouble.

Eucalyptus—its Medicinal Virtues.—David Wooster says (*Pacific Med. and Surg. Journ.*):—I have now used some gallons of this extract during a period of eight months in the U. S. Marine Hospital, and am surprised at its uniform and reliable effects in affections for which it is suitable. It is a diuretic of rare virtue, and may be administered when most of the diuretics now in common use are inadmissible. It is an aromatic tonic, and has notable restorative effects in low states of the system, as in typhoid fever, typhoid diarrhoea, and dysentery.

In vesical catarrh it alone cures. In spasmodic stricture it relieves with great promptness. In all affections of the mucous membranes its beneficial action is remarkable. I have treated many cases of acute gonorrhoea with no other remedy. In syphilis it is not useful. It is not antiperiodic. It is very useful externally in chronic ulcers.

Hypophosphites in the Toothache of Pregnancy.—Dr. Sterling believes that the toothache so common in pregnancy results from the abstraction from the blood of the salts requisite for the construction of the bones of the foetus, and accordingly recommends one and a half grains of hypophosphites of lime, soda, and manganese, daily.—*Nashville Jour. Med.*

Morphia and Chloral.—Dr. R. H. Fisher speaks very highly of the combined use of morphia and chloral for relief of pain.—*Med. News*, July, 1872.

Injection of Morphia before the Inhalation of Chloroform.—MM. Lubré and Guyon recently read a paper before the French Academy, in which they, as the result of four trials, conclude that: We—as M. Claude-Bernard has shown can be done in animals—obtain anæsthesia much more rapidly by combining the action of chloroform and morphia; secondly, that this anæsthesia is of longer duration, and may be kept up by smaller doses of chloroform, the risks of fatal accidents being thereby considerably diminished. They suggest

also that the quantity of morphia injected may be somewhat larger than that which they employed, and that the injection might be conveniently practised a longer time before the operation.—*Med. Times and Gaz.*, March 23, 1872.

Liebreich's Chloride of Æthyl.—This substance was used instead of chloroform in Langenbeck's wards in 1870, and with the best results. It gave rise to no vomiting; sleep was induced easily, but was less profound than with chloroform. Of course it was expected that the latter would soon be superseded, and that the chloride would prove quite innocuous; but a death under its influence, which lately occurred, proved that absolute safety in the use of anæsthetics has as yet been obtained.—*Lancet*, March 16, 1872.

Tracheotomy by the Galvano-Cautic.—In the *Revue de Thérap. Méd.-Chirurg.* of May 15 is contained the account of a discussion, in the French Academy of Medicine, on the successful cure of tracheotomy, performed by Dr. Jaubert, in which the galvano-caustic was used.

A Simple Substitute for the Poultice.—Apply thick wet cloths as dressing and cover with waxed paper. Greased paper answers this purpose pretty well also, and can always be readily obtained.

To stop the Bleeding from Leeches.—Make a ball of cotton about the size of a pea; put this pellet of cotton or lint upon the wound; press it down firmly; keep up the pressure for a quarter of an hour. Remove the finger cautiously, taking care to let the pellet remain.—*Druggists' Circular*.

Quinine in Cholera.—Professor Bolkin, in the cholera epidemic which took place in St. Petersburg in 1871, made use of the sulphate of quinine, which he administered in doses of 20 to 30 centigrammes at a time, three or four times a day, and even more frequently if the substance was vomited; in many cases he also made use of a subcutaneous injection of the remedy. After using this remedy the mortality among his patients fell to 17.3.—*The Doctor*, April 1, 1872.

Nitrate of Silver in Bed-Sores.—Betz regards nitrate of silver as the best remedy for bed-sores. Instead of making use, however, of lint dipped in the solution of lunar caustic, he prescribes an ointment composed of five decigrammes of the nitrate of silver, fifteen grammes of lard, and thirty of wax; which he spreads on linen and applies to the sores, taking care that the piece is rather larger than the sore. This is repeated morning and evening.—*The Doctor*, April 1.

Arrest of Epistaxis.—M. le Docteur Marin, of Genève, recommends, for the arrest of epistaxis (*Journal de Méd. et de Chir. Pratique*, May, 1872), the compression of the facial artery as it runs over the superior maxillary bone near the nose.

A New Preparation of Mercury.—Prumers, of Berlin, desires to introduce ethyl-sublimite or ethyl-chloride of mercury into therapeutic use. After some experiments on animals, he tried it in some syphilitic eruptions by injecting subcutaneously a solution containing one-tenth to one-fifth of a grain; ten to twenty injections suffice. The injections produce scarcely any pain, and no appreciable infiltration or induration of the part, presenting a marked contrast to the injection of corrosive sublimate. There is no disturbance of the digestive organs or salivation. He has also administered the agent in form of pill, the dose being half a grain to a grain night and morning. In this case also there were no unpleasant results.—*Medical Press and Circular*, June 12, 1872.

Bromide of Quinine in Syphilis.—In the *American Practitioner* for July Dr. David W. Yandell confirms Dr. Richardson's statements of the value of the bromide of quinine in chronic advanced syphilis, reporting a number of cures effected by its use. He gives it in doses of two to four grains three times a day until cinchonism is induced, and then in smaller quantities. About three months' treatment appears to be generally required.

A New Way of Combating Muscular Spasm.—M. Broca proposes (*Lyon Médical*) pressure upon the main artery, and consequent partial interruption of the circulation, as a means of combating the muscular spasms which are often troublesome after fractures have been set.

Carbolic Acid in Hydrocele.—In the *American Practitioner* for July Dr. P. E. Sandidge reports a case of double hydrocele cured by injections of two drachms of Calvert's solution of carbolic acid (No. 5), with a small quantity of water, after the failure of tincture of iodine.

Wahoo (*Euonymus Atropurpureus*) in Chronic Intermittent.—Dr. C. Richmond commends the wahoo in cases of chronic intermittent, especially when there is enlargement of the spleen and dropsy. He says: My manner of using this remedy is in the infusion of the fresh bark. The "fluid extract" I have never found to be as reliable. Two ounces of the fresh bark of the root to one part of water, poured upon it boiling hot and allowed to steep some time; of this,

from half a pint to one pint should be given each day. Drunk warm and in $\frac{3}{4}$ ij. doses every hour or two, it will generally procure several large watery alvine evacuations. Taken in half the quantity, or every three or four hours, it will act as a diuretic, and should be continued for days, if necessary. I generally give the remedy until it purges at first; then as a diuretic and tonic. Quinine can be given at the same time.—*Indiana Journal of Medicine*.

The Thirst-Cure.—In the *All. Milit.-Ztg.*, 1871, Dr. Pimser says that the result of the thirst-cure in pleurisy is very favorable; and in comparison with all methods of treatment hitherto employed it is very certain and rapid, and hence it is especially useful in hospitals and for persons who are peculiarly anxious to get well rapidly on account of their condition. The cure is commenced immediately after the cessation of the symptoms of pyrexia, that is, the inflammatory stage, since by quickly carrying out the process of sucking up of the exudation, the deposit of fibrinous bands and the occurrence of false membranes is hindered, and a complete recovery of the compressed lung takes place. The cure is certainly a heroic one, but is not at all dangerous to the constitution, even in delicate and emaciated persons, and even not in the cases where pyretic symptoms still exist when the cure is commenced, since these are alleviated by means of it. If no symptoms of resorption occur during the cure we may in great probability diagnose that there is pus present in the exudation, even though no symptoms betray this. In fact this treatment is not dangerous for the organism, and the patient picks up after it very rapidly.—*The Doctor*, April 1.

Treatment of Venereal Ulcers.—By Dr. Hemard.—In the *Med.-Chirurg. Centralbl.*, 1871, Dr. Hemard asserts that for the last twenty years he has obtained the cure of soft and hard sores by simply irrigating the parts with cold water. A vessel of cold water is fixed to the walls of the room, at such a height that the water which comes from it through a tube attains a certain force of projection. The patient has no more to do but to wash his ulcers every three or four hours under this stream; in a few days the ulcer becomes clean, and quickly heals. All other treatment is superfluous. In ulcers of the prepuce, which are out of sight, after irrigation a little starch flour is introduced. When the superficies of the ulcer has lost its characteristic aspect, a stratum of collodion is painted on it, and it soon heals.—*The Doctor*, April 1, 1872.

Incontinence of Urine.—In the *Atlanta Med. and Surg. Journal* for May, 1872, the repeated use of large steel bougies is

highly commended in puerile incontinence. The treatment is believed to afford relief by obtunding the urethra.

Cotton Wool as a Dressing.—Dr. Wm. Warren Greene commends cotton wool very highly as a dressing for wounds. He uses it in a way similar to that of M. Guérin.—*Boston Med. and Surg. Journal*, May, 1872.

Abdominal Aneurism Cured by Aortic Compression.—In the *London Lancet* of April 20 Dr. Walter Moxon reports a case of abdominal aneurism cured by Mr. Durham and himself, by compressing the aorta on the proximal side by means of Lister's abdominal tourniquet, the pad of which was adjusted and screwed down until all femoral pulsation ceased. The compression was steadily maintained for ten hours and a half, the patient being kept under chloroform. No severe constitutional or local symptoms followed. The aneurism after a few hours commenced to pulsate anew, but remained smaller and harder, and gradually grew smaller, so that at the end of a month all pulsation had ceased in it as well as in the femoral. The patient recovered health and strength.

Chloral in Hydrophobia.—In the *London Lancet* of April 20, I. D. Sauter reports a case, which he considers to have been hydrophobia, cured by the free use of chloral.

Extract of Nettles.—In *London Lancet* of April 20 is a partial report on the use of extract of nettles in whooping-cough, in which is detailed a case where the drug produced a peculiar erysipelatoid inflammation.

Carbolic Acid in Whooping-Cough.—Dr. C. Glen Bott has found carbolic acid to have wonderful power in arresting whooping-cough. He gives $\frac{1}{4}$ to $\frac{1}{8}$ of a drop freely diluted with water every four hours to a child eight years old, or in some cases $\frac{1}{8}$ of a drop three times a day to a child four years old.—*Medical Times and Gaz.*, June 29, 1872.

Carbolic Acid as a Local Anæsthetic.—Dr. A. H. Smith confirms (*New York Med. Journ.*) the value of carbolic acid as a local anæsthetic. He painted a spot on the forearm, about an inch in diameter, with carbolic acid of about the strength of 85 per cent. For about a minute there was a slight burning sensation, after which the integument became entirely insensible, the cuticle being whitened and shrivelled, and the spot slightly elevated. He then made an

incision without feeling it. The capillary circulation seemed not to be materially interfered with, as the blood flowed as freely as it would from a similar wound under ordinary circumstances. The reparative process was also not impaired, adhesion taking place immediately. Three hours after the application of the acid a needle could be thrust freely into the skin without causing pain.

Again carbolic acid was applied as before, and ten minutes after a fly-blister was placed upon the spot. The blister remained eight and a half hours without causing any pain, and without producing vesication.

He has also used the acid in this way successfully in opening superficial whitlows, and further commends it in the form of spray in persistent bronchial irritation.

He finally suggests the use of a strong solution of carbolic acid as a revulsive, in cases in which a continuous impression is desired. While causing but little suffering, it produces an intense hyperæmia of the skin, which persists for eight or ten days, and is followed by desquamation of the cuticle.

Nitro-muriatic Acid in Cirrhosis of the Liver.—Dr. J. H. Kidder, U. S. N., commends most highly (*Western Lancet*, May, 1872) nitro-muriatic acid used externally in cirrhosis. He says, *inter alia* :—

“The acid should always be made extemporaneously by adding to five parts, by volume, of strong hydrochloric acid, three parts of nitric. The additions must be made gradually, shaking the bottle well each time. After the acids have been well mixed, the bottle or jar should be left unstoppered for twenty-four hours before use. Three (3) fluid drachms of this acid, diluted with one pint of water, form a lotion, which is to be applied over the region of the liver twice a day, with *brisk friction*, while at the same time the feet are immersed in a bath of the same. The hands of the attendants making the application should be protected by oiled silk gloves, else, as stated by Inspector Martin and verified by my own experience, bilious diarrhoea will result to them, from absorption of the acid through the palms of the hands. If the practitioner please, he may give the acid internally, in the usual doses, but I have found its administration in this manner not effective, and very likely to disturb the already vitiated processes of digestion.

Nitrite of Amyl in Puerperal Convulsions.—Dr. Wm. F. Jenks reports a case of puerperal eclampsia, in which nitrite of amyl arrested at once the convulsions, but the inhalation was fol-

lowed by frightful hemorrhage. Dr. Jenks, commenting on the case, says: First of all, there exists during gestation hydræmia, producing thereby an increased vascular tension, giving rise in some cases to symptoms such as were present in this patient during the latter months of gestation. At the time of labor, the intra-cerebral vascular pressure is increased to such a degree that a serous exudation takes place, producing œdema of the brain-tissue and dropsy of the membranes. As the result of this *extra*-vascular pressure, a condition of secondary anæmia is mechanically brought about. This it is which produces the eclamptic spasm, each one of which bears with it new danger to the patient, viz.: an increase in the amount of the exudation, resulting finally in an œdematous imbibition of the nervous centres, which is fatal. Not only in the brain, but also in the lungs is this increased vascular tension productive of mischief, for some cases which survive the convulsions die after labor of œdema of the lungs. Hence the diminution of this vascular tension becomes an *indicatio vitalis*. The lancet is the readiest means, but the relief is not always immediate; a certain amount of time is requisite to regulate the new conditions of intra-vascular pressure, and any agent which will rapidly diminish this tension of the vessels will, *a priori*, check the imminent spasm and abort the attack.

This is the first action of the nitrite of amyl, and this property led Dr. S. Weir Mitchell to suggest its use to me in cases of puerperal eclampsia. In this individual case its action in arresting the spasm was immediate and satisfactory. Its use carries with it, I fear, however, a certain amount of danger. It relaxes also the muscular system, and the profuse^b post-partum hemorrhage I had to deal with after the uterus had once firmly contracted may perhaps have had its origin in the use of this drug.

(Physiological teachings certainly indicate that the inhalation of nitrite of amyl after delivery must of necessity cause flooding.—Ed. N. R.)

Method of Disinfecting.—Dr. Clemens (Frankfort O. M.) highly recommended burning a spirit-lamp containing chloride of copper in the hospital wards. It must not be used in excess, on account of the irritating effects on the throat, eyes, etc. His formula is:—

R Liq. cupri perchlor. conc. 3 ij.
Chloroformi. 3 i.
Spirit. vini. 3 vj.

This is put in a common spirit-lamp containing a wick, and allowed to burn two or three times a day, five or eight minutes each time.—*Detroit Review of Medicine.*

Treatment of Buboos.—Dr. R. C. Brandies, in a letter to the *Richmond and Louisville Medical Journal* from Vienna, says that Professor Zeissl, the Chief Physician of the Second Division for Syphilitics in the Vienna General Hospital, has had marked success in treating acute and subacute inguinal and femoral buboos with acetate of lead. This treatment has now been carried on in the following manner for the last two years: If, after the first examination, it may be hoped that the integument covering the glandular enlargement can be saved, it is thoroughly washed and cleansed of all foreign matter adhering to it. The patient is put to bed, and a compress, soaked in a solution of the acetate of lead, is applied to the swelling. The compress is moistened from time to time, so that the bubo is always bathed with the solution. After three or four days the skin covering the swelling is already considerably thickened and toughened. If any fluctuation be noticeable at the beginning of treatment, we generally find that it gradually disappears, and that the swelling acquires a doughy consistency. Should the pus increase in quantity, a vertical incision with a bistoury is made into the mass, care being taken that the wound be not too large, as it is desirable that the contained matter should escape but slowly. This evacuation is promoted by the application of the moist compress, which is held in apposition with the diseased parts by means of a spica bandage.

Treatment of Articular Rheumatism by Ice.—In the *Gaz. Méd. de Strasbourg*, February, 1872, we notice that Dr. Esmarch published in the *Langenbeck's Archiv*, about 1861, some observations on this subject. In the past winter there presented themselves in the ambulances four cases of acute rheumatism, which were treated by means of ice alone. In the first there was great pain in the joints of the feet; during the day the affection extended to the knee-joints, where ice was locally applied. On the morrow the superior extremities were also affected with pain, the pulsations of the heart were weak, and the first sound accompanied by a murmur. All the painful articulations were covered with bladders containing ice. On the fourth day the pain had almost disappeared; on the fifth the pulsations of the heart were normal; on the sixth there were no longer any local symptoms; on the seventh the fever had ceased.

Two other cases were similarly followed by equally favorable results in the space of four days. In a fourth case ice was not used until the fifth day, but in four days after this the pain had disappeared with all other symptoms. Before the ice was applied the temperature increased gradually, but after its application it gradually became lowered. The author says that he would not hesitate to use ice even in cases of gout;

and as to the metastasis of rheumatism to the brain, he considers this to be the effect of the temperature. At Kiel there was received into the hospital a patient with rheumatic delirium, and with a temperature of 43° C. He was immersed in water, and a cure took place. The application of ice should be continued until all symptoms disappear. The author is convinced that when the prejudice against the use of ice is overcome, it will be used often in acute joint-affections. Ice-bladders should be used, and not cold compresses, as Priessnitz did.—*The Doctor*.

Hydrochlorate of Ammonia.—Dr. Spencer Thompson says, in the *British Medical Journal*, that he has found this one of the most efficient remedies in portal dropsy, in scruple or half-drachm doses, tolerably diluted, every six or eight hours.

A Simple Method of Arresting Epistaxis.—Dr. Roland G. Curtin says (*Phil. Med. Times*), Dr. Albert H. Smith, in order to soften the nasal mucus of children in the nostrils, recommends the introduction of lard upon a small roll of fine linen wrapped like an ordinary lamplighter.

It occurred to me, in a case of epistaxis, that a similar roll of paper, moistened with water and coated with the dry tannic acid, inserted into the nose, might be of service. I tried it, with immediate success.

I have since found that old linen answers the purpose better than paper applied as above, as it makes a better carrier, being softer, more flexible, and less liable to break down through excess of moisture. I have also found that the powder adheres better if soft lard be used instead of water.

I have tried this repeatedly with uniform success, and believe, if it were resorted to, that the disagreeable operation of plugging would seldom be found necessary.

Quinia not an Oxytocic.—Dr. A. D'Arcourd, ex-division surgeon of the French Army, now of Thebes, Alexander Co., Ill., writes us that for over 25 years he has used quinia in large doses for the cure of intermittent fever, in pregnant women as well as in other patients, without any symptoms of uterine disorder in the former resulting; and in 98 or 99 cases in a hundred the malarial affection has been controlled early, and such has been the result of this treatment in every latitude.—*Medical News*.

Carbolic Acid in Pruritus.—In prurigo and pruritus, says I. Pintschovius, in the *Allgemeine Medicinische Central Zeitung*, I have successfully tried carbolic acid externally. I prescribe a solution containing $2\frac{1}{2}$ per cent. of carbolic acid, and of this direct a tablespoon to be mixed with a teacupful of rain-water. Every morning and evening the diseased skin is thoroughly sponged with this. I treated 30 patients in this way, and every one has recovered in from three to eight days' time.—*Medical and Surgical Reporter*.

Chlorate of Potash to prevent Salivation.—Dr. Dodge says:—It has been my practice for the last three years to administer chlorate of potassa in connection with a mercurial, whenever I desire to give the latter for any length of time. I do not administer chlorate at the same time that I do the mercurial, but at longer intervals, and nicety of dose is immaterial; a small quantity is sufficient. I cannot see but that I obtain the therapeutical effects of the mercurial as readily as before I gave the chlorate. In secondary and tertiary syphilis I have employed the same agents with similar results.

But still more in active inflammation, when I have given repeated doses of calomel at short intervals, with an occasional dose of chlorate, I have obtained the desired effect of the calomel, but never produced the slightest symptoms of ptyalism.—*Transactions of Minnesota State Med. Society*, 1872.

Olut Kumbool.—Bhoobun Mohun Sircar commends most highly a medicine with the above name as a remedy for neuralgic and congestive dysmenorrhœa, which he says it relieves wonderfully. It is to be given during the menstrual period, and not only cures the pain at the time being, but permanently. The author says he has used it in 500 cases.—*Indian Med. Gazette*, July 1, 1872.

ACTION OF ALCOHOL.

DR. LIONEL S. BEALE sums up, in the *Medical Times and Gazette*, as follows:—

“1. In external wounds, and in internal diseases where alcohol acts beneficially, the good result is, in part at least, due to the alcohol checking the *increased action* already established.

“2. Alcohol does not act as a food; it does not nourish tissues. It may diminish waste by altering the consistence and chemical properties of fluids and solids. It cuts short the life of rapidly-growing bioplasms, or causes it to live more slowly, and thus tends to cause a diseased texture, in which vital changes are abnormally active, to return to a normal and much less active condition.

" 3. In 'exhausting' diseases alcohol seems to act partly by diminishing very rapidly the abnormally-increased growth of bioplasm. The quantity required will depend upon the extent to which the changes alluded to have proceeded. In extreme cases half an ounce of brandy, or even more, may be given for a time (in some cases even for several days) every half hour; and there is reason to believe that in desperate cases life is sometimes saved by this treatment.

" *Practical conclusions.* Lastly, I shall venture to repeat here the conclusions I arrived at many years ago concerning the great value of the alcoholic treatment of low fevers and inflammations. Increased experience has afforded further confirmation of the correctness of the statements made in the paragraphs below. I do not, of course, refer to slight cases of fever, pneumonia, etc., in which no stimulant whatever may be required, but to *very severe cases of disease* only.

" 1. In what appeared hopeless cases, as much brandy as the patient could be made to swallow (an ounce and a half to two ounces in an hour) has been given for several hours in succession, and then as much as thirty ounces a day for several days, not only without producing the slightest intoxication, vomiting, or headache, but the treatment has been followed by recovery.

" 2. I would adduce the fact that a man not accustomed to drink, when suffering from acute rheumatism, complicated with pericarditis with effusion, pneumonia at the base of one lung, and pleurisy on the opposite side, has taken twenty-four ounces of brandy a day for eleven days, the tongue being moist and the mind calm during the whole time. While under this treatment inflammatory products were absorbed, and the general state of the patient much improved.

" 3. I have been compelled to give a very weak child, weighing less than four stone, twelve ounces of brandy a day for ten days, while suffering from acute rheumatism, with pericarditis and effusion. This quantity did not produce the slightest tendency to intoxication, or exert other than a favorable effect upon the disease. The patient did not begin to improve until the quantity of brandy, gradually increased, had reached the amount stated.

" 4. I would state that among the general conclusions I have reached after carefully watching more than one hundred cases of acute disease treated with large quantities of stimulants, are the following: that intoxication is not produced; that delirium, if it has occurred, ceases, or is prevented from occurring at all in the course of the case; that headache is not occasioned; that the action of the skin, kidneys, and bowels goes on freely; that the tongue remains moist, or, if dry and brown, often becomes moist; that the pulse falls in frequency and increases in force; that respiration is not impeded, but that, where even

one entire lung is hepatized, the distress of breathing is not increased, and it appears that the respiratory changes go on under the disadvantageous circumstances present as well as if no alcohol had been given.

"The conclusion from all this is, most certainly, that alcohol does not do harm in fevers and acute inflammations; that it does not produce intoxication in the persons suffering from exhausting diseases; and that large quantities (from twelve to thirty ounces) may be given in cases which appear very unlikely to recover, and sometimes the patient will be saved. The conviction is forced upon the observer that in desperate cases these large quantities of alcohol are directly instrumental in saving life, not by *exciting or stimulating to increased action*, but by *moderating actions already excessive*, and at the same time by causing the heart to contract more vigorously, and so continue to drive the blood through the impeded capillaries."—*Med. Times and Gazette*.

Ingrowing Toe-nail.—By DR. G. STILLWELL.—Forty years since, when I was an assistant, a young farmer one day came to the surgery, and was operated upon for an ingrowing toe-nail. This was done by tearing the nail away. The poor fellow suffered so severely that I was induced to say, "I will never perform that operation." Of course, in many years' active practice, I have had many such cases under my care; and my invariable mode of proceeding has been to find the edge of the nail with a probe, and then remove the whole of the granulations and hypertrophied cellular tissue on both sides, if requisite. In no case have I been disappointed, or ever had to treat the patient for a return of this grievous complaint. I fully expected that this mode of treatment was general; but my attention has been recently drawn to the case of a fine young man rendered almost a cripple, by having had both his great toe-nails torn out, leaving the overlapping skin to such an extent as to prevent healing, with the probability of return on the growing of a new nail.—*British Medical*.

Traumatic Tetanus successfully Treated by the Bromide of Potassium.—By CEPHAS L. BARD, M.D.—F. S., æt. fifteen, during the latter part of April, 1872, stepped upon a bone, the vertebra of a hog, and although the wound produced was deep and bled profusely, yet it healed rapidly and caused but little inconvenience. Five or six days subsequently she complained of pain in her temples, and of stiffness of her jaws. I found all the pathognomonic symptoms of traumatic tetanus present: a rigid contracted condition of the body, which was bathed with a profuse sour perspiration; opisthotonos; spasms at short intervals; aged expression of countenance, with the

rius sardonius well marked; temperature of body 105° ; terrible pain in the epigastrium, due to spasm of diaphragm; pulse normal and mind clear. Retention of urine and constipation of the bowels were also among the symptoms present. There was no pain whatever at the site of the wound, which, to all appearances, had kindly healed. Having laid open the wound, situated in the inner plantar region of the foot, I discovered and removed a small spicule of bone. The use of stimulants and nourishing articles of diet were ordered; the warm bath; poultices to the wound; and the bromide of potassium, commencing with thirty grains, given every hour, till four doses had been taken, when both the quantity and frequency of administration were lessened. A decided amelioration of the patient's condition almost immediately occurred, and she slowly but gradually recovered, although the trismus, which was the last symptom to vanish, existed for three weeks later. During this time she continued to use the bromide, the whole quantity taken amounting to three ounces. No bad effects whatever, from its protracted use, were noticed.

Epilepsy Treated by Bromide of Potassium.—In a recent number of the *Gazette des Hôpitaux*, Dr. Du Saulle has published the results of the administration of bromide of potassium in two hundred and seven cases of epilepsy. Headache, gastric disturbance, disturbance of sensation, and other troublesome symptoms have been described as following the use of the remedy; but these he has not found to occur when the drug has been pure. When the quantity taken daily reaches 4 *grammes*, the reflex sensibility of the fauces, epiglottis, and root of the tongue, and the sensibility of the generative organs, are diminished. Acne then also appears; which is not, however, as has been represented, of critical importance. Dr. Legrand du Saulle commences with a *gramme* and a half or two *grammes* daily, and increases the dose gradually to 6 or 9 *grammes* a day. Of 207 epileptic patients treated with bromide of potassium, all symptoms of epilepsy ceased in 17, who were under observation during three or four years; 28 remained free from one to two years; in 33 there was marked improvement; in 19 the intervals between the attacks were increased, and these were less severe; in 110 there was no result. Dr. Legrand considers that it is not safe to entirely omit the use of the bromide, even when there has been no epileptic attack for a year. The patients, however, must be watched; for, under the prolonged use of the bromide, mental disturbance, stupor, confusion of ideas, impotence, and acne are apt to set in. The last named affection has sometimes disappeared under the use of arsenic simultaneously with the bromide of potassium.—*Medical and Surgical Reporter*.

Ammonia in Suspended Animation.—A lady in Melbourne recently swallowed, by accident, an ounce of Browne's chlorodyne, which is a mixture of chloroform, morphia, and prussic acid. When seen by her medical attendant, she was, as he imagined, on the point of death—cold, insensible to everything, and giving only occasional gasps as signs of breathing. Recollecting a former case in which a young man who had taken chloroform was revived after death had apparently occurred, the doctor mixed half a drachm of the liq. ammon. fort. with one and a half of water, and within the space of one minute injected the whole into a vein of the arm. In a few minutes the pulse returned, the breathing became natural, and by twenty minutes the whole body had regained its natural warmth, but perfect consciousness did not return for some hours afterward. The patient made a rapid recovery.—*Melbourne Argus; New York Medical Journal*, Sept., 1872.

India-rubber Cloth in Diseases of the Skin.—Since 1868 (*Journal de Méd et de Chir. Pratiques*), M. Hardy, of Paris, has been employing india-rubber cloth in place of poultices or local baths. He employs pieces of cotton, covered with a layer of caoutchouc, and forming an impermeable tissue. This is only applicable to the extremities and to the head; and for the latter region he makes use of vulcanized india-rubber caps. After a certain time the part enveloped becomes not disagreeably warm, and then an abundant sweating takes place, under the influence of which the crusts and the squames which cover the skin are removed, the epidermis spreads over the ulcers, and the skin becomes softened. The results obtained are similar to those obtained by poultices, but preferable for many reasons. Daily experience of the Hôpital St. Louis shows a great rapidity in the modification of the skin: two or three days of application suffice completely to cleanse the scalp when covered with abundant scales of eczema, etc. After forty-eight hours' application of the india-rubber cloth upon hands attacked with chronic eczema, with fissures and cracks in all directions, the wound becomes cicatrized, and the skin recovers its suppleness. This treatment is especially of great value in eczema in the second period of the disease. The crusts are removed, the plastic secretion disappears, and a thin epidermis, glistening and smooth, gradually covers the diseased part, and the eczema rapidly enters the third period. Itching is rarely relieved by this method. In ecthyma the pustules open, and the cure proceeds very quickly, thanks to the envelope. It must be noticed that the cloth must be covered with india-rubber, for the trial made with oiled silk did not succeed. The limbs should be completely enveloped; but the india-

rubber cloth ought only to be tied on at the ends—between the ligature it should form a large sleeve. It should be kept on for a considerable time, and the patient should lie in bed. This method is also employed to make the scales of the psoriasis fall, or to restore the suppleness to the skin in chronic lichen.—*The Doctor*, August 1.

Veratrum Viride as a Hemostatic.—Dr. J. W. Collin calls the attention of the profession to the veratrum viride as a very powerful and very reliable agent for the arrest of hemorrhage, both active and passive. It should be given in doses of from three to fifteen drops, repeated every one, two, or three hours, according to the urgency of the case, always carefully watching its effects.—*American Practitioner*, Sept.

Celery in Amenorrhœa.—Dr. Gamberini commends the volatile oil of celery in amenorrhœa. He gives from one to two and a half grammes daily, in 30 grammes of emulsion. He cites three cases in which the effects were remarkable.—*Revue de Thérap. Méd.-Chir.*

Hypertrophy of Tonsils Treated by Chromic Acid.—Dr. B. Frænkel (*Berlin Klin. Woch.*) says that the application of fine needles of chromic acid to the tonsils is almost without pain or danger, and causes a notable shrinking of the parts. By frequently applying this remedy, we can cause the hypertrophy to be reduced to one half its volume. He also injects tincture of iodine into the tonsils in some cases. The iodine is dissolved in 100 parts of glycerine.—*The Doctor*, August 1.

Asthma Cured by a Poisonous Dose of Sulphate of Atropia.—Dr. L. P. Yandell, Jr. reported to the Louisville College of Physicians, some months ago, the case of a young man who was being treated for chronic asthma, and who, in a fit of anger, took one grain of the sulphate of atropia in half a pint of water, at a draught. The symptoms soon became alarming, but finally yielded to the ordinary means, though it was some days before the patient recovered the use of his limbs or the pupils returned to their proper size. From that time until the present the young man has been entirely free from his asthma, and seems to be cured.

Muriate of Berberina in the Enlarged Spleen of Malarial Fever.—Dr. Machiavelli (*Giornale Veneto*) has a paper on the muriate of berberina, in which he states that he has used it hypodermically in fifty-one cases of chills (most of the patients were soldiers, suffering from chronic malaria, with large spleen, in whom quinine

had lost all therapeutic power); thirty-four were cured, and sixteen were improved, whilst one died of miliary tubercles.

Action of Tartar Emetic.—Dr. S. Radziejewsky, of Berlin, has published in *Archives für Anat. Physiol. und wissenschaftl. Med.* a paper upon tartar emetic, in which, as the result of a number of experiments, he arrives at the following conclusions:—

1. The vomiting caused by tartar emetic taken into the stomach is the result of a direct influence upon the mucous membrane of the stomach, and not an effect of absorption.

2. The diminished heart-action which accompanies this vomiting is not a potash action (*Kaliwirkung*) but a reflex influence.

3. Antimony, besides its influence on the intestinal canal, has a general action; it paralyzes the perceptive faculties of the cord and depresses (in a less degree than arsenic) the heart's activity.—*Schmidt's Jahrbücher*, June 11, 1872.

The Use of Galvanism in Basedow's Disease.—In the *Wiener Medicinische Presse* of August 11, is the history of a case of Basedow's disease cured by the use of a continuous galvanic current applied to the sympathetic system of the neck, reported by Dr. W. Chvostek.

Galvano-Emesis.—Dr. Charlton Fox details, in the *Birmingham Medical Review* for October, 1872, several cases of poisoning by fungi. One of the cases was apparently dying, and as the doctor was preparing to use "galvanism" (induced current?) to produce respiration, the thought struck him that he might induce vomiting by the same instrumentality. Accordingly he passed one pole of an isolated conductor into the fauces, and applied the other pole by means of a wet sponge to the epigastrium. Immediate vomiting ensued, and some large pieces of fungi were thrown up; the application was repeated with similar result until the stomach was emptied. The method was then tried in a second case with similar results. Dr. Fox thinks that the galvanism did not act by irritating the fauces, because the patients were insensible to the fumes of the strongest liquid ammonia.

On the Elimination of Mercurial Salts.—As the result of a number of apparently carefully conducted experiments upon himself, Dr. H. Byarson arrives at the following conclusions (see *Robin's Journal de l'Anatomie*, October, 1872):—

1. The bichloride of mercury taken into the stomach appears in the urine about two hours afterwards.

2. It appears in the saliva in about four hours.

3. It cannot be found in the perspiration.

4. After the ingestion of a full dose, the elimination is complete in about twenty-four hours.

5. A part can be found in the fæcal matters.

Powdered Acetate of Lead for Hæmorrhoids.—M. Decondé has obtained very good results by the application of acetate of lead to hæmorrhoids. He places the finely powdered salt in a canula, which he introduces into the rectum, and then by means of a syringe forces the powder out.—*Revue de Thérap. Médico-Chirurg.*, Aug. 1, 1872.

Glycerine in Diabetes.—Prof. Schultzen of Dorpat (*Berlin Klin. Wochens.*, Aug. 26, 1872), states that he has obtained very remarkable results from the use of glycerine in diabetes. His cases have not been watched sufficiently long to settle whether the benefit be permanent or only temporary. He gives from one to two or even more ounces daily, avoiding the production of vomiting or purging.

External Use of Fuming Nitric Acid.—Professor Patruban (*Memorabilien*, June, 1872) says that this heroic caustic is often indicated on account of its rapidity and its drying up the tissues. It stops all effusion of blood, and leaves good scars. He uses it for warts and other protuberances of the skin, as condylomata, epulis, hæmorrhoids, and tumors of the nature of nævi.

On the Antagonism of Opium and Belladonna.—In the *Medical Times and Gazette* for September, 1872, Dr. Jas. Johnston details a number of cases of poisoning, which he thinks prove conclusively the antidotal value of atropia, and in the *Bulletin de l'Académie*, of August 27, M. Abeille asserts a similar opinion, and details a case in which he injected morphia for atropia poisoning, produced by a very large hypodermic injection.

Traumatic Anæsthetic Amaurosis Cured by Electricity.—In *La Nuova Liguria Medica*, No. 26, 1871, Dr. Dominique Ramorino reports the case of a man who had suffered for twelve days from an amaurosis immediately following a blow on the eyeball. Three treatments, of ten minutes each, with electrical current (continuous?) sufficed for a perfect cure.—*Revue de Thérap. Méd.-Chir.*, October 15, 1872.

Coca in Chronic Atonic Conditions.—In the *Revue de Thérap. Méd.-Chir.* of October 15, there are detailed two chronic cases, one of syphilis, the other of partial loss of voice from hypertrophy of tonsils, with granular pharyngitis and laryngeal relaxation, in which wine of

coca was given with most happy effects after failure of the more ordinary remedies.

M. Briquet on Sulphate of Cinchonine.—M. Briquet, so favorably known by his former writings on sulphate of quinine and other preparations of bark, has just read at the Academy of Medicine (October 1) an interesting paper, in which he enters upon an elaborate vindication of the therapeutical properties of sulphate of cinchonine against an unfavorable report pronounced on it by a committee consisting of MM. Lévy, Bouchardat, and Moutard-Martin. The results of this investigation are elaborately detailed in the *Bulletin* of the Academy, to which we must refer our readers for them, contenting ourselves with stating that M. Briquet, founding his statement on 893 cases in which its therapeutical agency has been undoubtedly favorable, declares that its effects in intermittent fever of moderate and medium intensity, in arresting the paroxysms of typhoid fever, in diminishing the size of the spleen, and in neuralgia, are just as well marked as are those of quinine, although less in degree. It is at least, then, a valuable succedaneum to quinine, possessing all its properties, but in a less active degree. It is therefore well suited to the slighter cases of intermittent. M. Briquet attaches great importance to the mode of administration, giving it in doses of fifteen grains—which, however, are to be divided into five or six portions, one to be taken every hour, leaving between the last taking and the expected paroxysm an interval of eight or twelve hours.—*Medical Times and Gazette*, Oct. 19.

Treatment of Hydatid Cysts of Liver by large Openings with Caustics and Astringent Injections.—Prof. Richel terminates a clinical lecture upon the subject in the *Gaz. des Hôpitaux* as follows :—

1. I make a capillary exploratory puncture and examine the liquid obtained chemically and microscopically to assure the diagnosis.

2. The diagnosis being made certain, I apply the Vienna paste to prepare the way for the king of caustics, the chloride of zinc. I destroy thus layer by layer the abdominal walls until I arrive at the peritoneum, which I puncture to test the thickness and firmness of the adhesions. These two points having been favorably determined, I plunge a trochar of the thickness of the thumb into the centre of the eschar and allow the canula to remain until the next day, when I substitute for it a flexible canula of gum of the same character. In this way the liquid of the cysts is certainly caused to infiltrate and traverse the still soft exudation uniting the liver and abdominal walls. After some days, if the opening does not seem sufficient to

allow the ready passage of the large sacs, I dilate with sponge-tents until it will receive a still larger canula.

The injections consist of solution of tannin with a third or fourth part of alcohol. I do not think it prudent to diminish the size of the canula until it is definitely ascertained the walls of the cyst are sensibly modified and already notably drawn together.—*Revue de Thérap. Méd.-Chirurg.*, Sept. 15, 1872.

On the Influence of Morphia, Quinia, and Arsenic upon the Destruction of Nitrogenous Tissues.—Dr. H. V. Boeck has been experimenting upon the above subject, and published a paper thereon in the *Zeitschrift für Biologie*, vii. 4, p. 418, 1871. He employed the method of Voil, and found that under the steady use of morphia there was no very distinct lessening of the amount of nitrogen excreted. With quinia there was a much more apparent distinct lessening of the nitrogenous excretions, and that finally there was no appreciable diminution in the throwing off of nitrogenous compounds under the use of arsenic to the daily amount of 0.01 to 0.06 grammes.—*Schmidt's Jahrbücher*, Sept. 9, 1872.

Tincture of Eucalyptus in Intermittent Fever.—Dr. Lorinser, out of 51 cases of intermittent, has had 43 completely cured by the tincture of eucalyptus alone. Once the eucalyptus failed, as did also quinine; once it was vomited; in one case the patient refused to take it continuously. In 11 cases quinine had been given unsuccessfully; 9 of these were cured by the eucalyptus.—*L'Union Pharmaceutique*, Sept., 1872.

Collodion in Herpes Zoster.—By DR. WESLEY M. CARPENTER.—“I would call the attention of the profession to the use of collodion in this disease. It may have been noticed before this, but I have not happened to see it, if such is the case.

“One of the most distressing symptoms in this disease is the intense stinging, burning, superficial pain which often accompanies the eruption. I have no reference to the so-called ‘characteristic pain,’ which may continue a long time after the disappearance of the eruption.

“Great relief may be given from this burning pain by the application of collodion to the surface occupied by the vesicles. This may be done with a feather or camel's-hair brush. The collodion forms a pellicle over the surface of the vesicles, which protects them from the air, and renders them less liable to rupture. It may be applied at any stage of the eruption, and, in most cases, acts like a charm in giving relief to this annoying accompaniment.

“In general, the disease needs no other local treatment.”—*Medical Record*.

Use of Diluted Pyroligneous Acid as a Gargle.—Put a teaspoonful of the acid obtained from the shops into a wine-glass of water, and direct the patient to gargle the throat frequently with it.

In the sore throat caused by exposure, so common throughout the country, it generally relieves the soreness and stiffness felt in swallowing very promptly.

In chronic inflammation, with or without ulceration, of the throat, I have found it a very valuable remedy.

In the sore throat of Scarlatina it has generally afforded a very prompt amelioration of this symptom of the disease.

In several cases of habitual tonsillitis, by using this gargle freely at the commencement of the disease, I have been able to arrest the progress of the inflammation and secure resolution.

Its use is not unpleasant; it is safe even if used for hours continuously, and has an additional advantage in removing the fœtor of the breath.—*Georgia Medical Companion*.

Caraway Seeds as a Galactagogue.—Dr. Bareste, knowing that in some parts of Europe the peasants give Caraway seed to the goats to increase their milk, conceived the idea of trying them on woman. He has prescribed them three times to nurses who had lost their milk from acute illness, with perfect success.—*Revue de Thérapeut.*, Jan. 1, 1873.

Veratrum Viride.—In the *Philadelphia Medical Times* for Jan. 18 and 25, is an elaborate paper on veratrum viride by Dr. Eugene Peugnet, which is too long for insertion here, and cannot very well be abstracted.

Ileus Cured by Forced Injections of Cold Water and the External Application of Ice.—Dr. P. Pereira reports the case of a man aged 40, apparently in the last stage of ileus, with stercoraceous vomiting and imminent complete collapse, cured by the repeated forced injections of large amounts of cold water, and the internal use of small pieces of ice; large pieces of which were also applied externally. For the soreness and pain remaining after a fecal passage had been obtained calomel and opium were employed; relief was especially obtained by painting the abdomen with collodion.—*Revue de Thérap.* from *Gaz. Medica de Bahia*.

Carbolic Acid for Condylomatæ.—Dr. Boise destroys condylomata by placing upon them liquid carbolic acid pure or in very concentrated solution, the neighboring parts having been protected previously. The little tumors turn white, mummify and drop off, without leaving any ulceration; no inflammation is ever excited.—*Revue de Thérapeut.*, Dec. 1, 1872.

Tincture of Iodine in Cholera Infantum and Dysentery.—

Dr. Gilliam says, in *The Clinic*, "As iodine has the property of arresting transudations, and as it is of particular value in many inflammatory affections of the skin, and as the skin and mucous membrane are very analogous in structure, *a priori*, it would seem probable that iodine might be of service in the above-named affections. I have tried it in a case of cholera infantum and in a case of dysentery. It seemed to yield good results in the former, and eventuated in a cure. In the latter its influence was not so marked, though seemingly beneficial.

Nocturnal Incontinence of Urine treated by Hydrate of Chloral.—Dr. Girolamo Leonardi has recorded in the *Ippocratico* of Naples, the results of the use of chloral in three cases of incontinence of urine. The administration of the drug very rapidly effected complete and permanent cure. Together with the administration of chloral, Dr. Leonardi recommended very little drink to be taken in the evening. In the first case, a scrofulous woman, aged 24, who had been constantly suffering from the complaint since the age of 18, chloral administered in doses of 15 grains every night during 5 nights, and of 15 grains every second night during 10 nights, was remarkably successful. The incontinence was immediately stopped. A course of chloral was continued from time to time. The second case was that of a child, aged 7, who took only one-third of a grain of chloral for 5 nights. The third case was quite as successfully treated in the same way.—*Lancet*, October 26, 1872.

Ingrowing Toe-Nail.—About twenty years ago I applied a bit of compressed sponge to afford temporary relief, and was delighted to find that it effected a radical cure. I make the sponge as solid as leather, by wetting and then winding a string tightly around it, and drying it thoroughly. Of this I cut a small pyramidal piece, less than a grain of rice. This I insert beneath the nail and secure by strips of adhesive plaster, applied longitudinally, to avoid compression. The sponge soon becomes moist and swollen, keeping the nail from the irritated flesh. Any granulations should be previously destroyed with strong nitric acid. I have adopted this plan upon many occasions, and have never found it to fail.—Benj. Blower, *British Med. Jour.*

Galvano-Acupuncture for Aortic Aneurism.—Prof. E. De Renzi reports a case thus treated, and reviews the records of other cases. In his own case the battery used was one of twenty-one elements; the zinc plates four to five centimetres broad, by eight long, immersed about half their length. The index stood at sixty when the circuit was open, at twenty when it was closed. Six needles

were inserted, and each pole was attached for five minutes to each needle, so that the whole operation lasted an hour. On the seventh day the man died of rupture of the sac. An autopsy showed no trace of any clot near the points where the needles had entered, but some evidence of inflammation. The conclusions to which Prof. De Renzi is led, by his review of Ciniselli's cases and others, are—1. That no case is known of a complete and permanent cure of aortic aneurism by galvanopuncture; 2. That the cases of apparent cure are more readily explained by the irregular course of the disease, and the effects of quiet and good hygienic influences; 3. That the operation is harmless in itself, but may be the indirect cause of mischief by inducing changes in the walls of the sac, rendering them more liable to burst.—*Nuova Liguria Medica. New York Med. Journal*, Jan. 1873.

The Oxalate of Protoxide of Iron.—At a recent meeting of the Académie de Médecine (*Bull. de l'Académie*, Oct. 12) M. Caventou delivered in his report on this substance, which had been laid before the Academy two years since by M. Girard. The reporter stated that the mode of preparation recommended by M. Girard is in nowise different from that usually employed in laboratories. Its therapeutical properties have been carefully tested by M. Hérard in cases of chlorosis and anæmia, and these prove to be worthy of attention, presenting a preparation of iron which, while proving efficacious, has no tendency to produce constipation. The preparation is almost insipid, is readily taken by patients, and easily borne by the stomach. Given in doses of from ten to twenty centigrammes per diem it increases the strength and cures chloro-anæmia as well as other good preparations of iron, while it establishes a peculiar claim by not causing constipation. Indeed, by raising the quantity to from thirty to fifty centigrammes, an aperient action is obtained. M. Caventou considers that this remedy should be indorsed with the recommendation of the Academy, which is necessary for the authorization of new remedies during the intervals that elapse between the editions of the Codez.—*Med. Times and Gaz.*, Nov. 23, 1872.

Nitrite of Amyl in Spasmodic Asthma.—Dr. James A. Duncan, of Toledo, Ohio, relates (*Michigan Univ. Med. Journ.*, Dec. 1872) three cases of spasmodic asthma promptly relieved by the inhalation of a few drops of the nitrite of amyl.

Abortive Treatment of Furunculi.—As soon as there is perceived on any part of the body that characteristic redness, round in form and variable in size, with a culminating point in the centre, which, red at first, soon turns to a grayish-white, pour into a little saucer a thimbleful of camphorated alcohol; dip three fingers of the right hand in-

to the liquid, and gently rub the part, especially the middle; moisten the fingers, and rub again in the same manner eight or ten times, for half a minute each time. After this friction, dry the place well, and anoint it lightly by the finger with camphorated olive oil, to prevent the evaporation of the camphor. It is rare for a blind boil or furuncle, at the moment of lessening, to resist four applications of this kind. Often they decrease in inflammation, dry up and disappear, after only one application. When many applications are necessary, it is well to let a certain interval of time elapse between them—for example, to make them morning, mid-day, and evening.—*Brit. Med. Journal*, Dec. 21, 1872.

Tincture of Chloride of Iron for Corns.—Dr. C. Barber states (*Lyon Médicale*) that he has cured three cases of corns on the toes by the application of a drop of the tincture of chloride of iron applied on the corns night and morning. This application was continued for fifteen days in one case, when the corns, from which the patient had suffered for thirty or forty years, were entirely destroyed, and pressure on the part gave not the least uneasiness.—*Medical News*.

Sick-Headache (*British Medical Journal*, December, 21, 1872).—In a report on the treatment of this distressing affection, Dr. Wilks recommends three remedies. To cut short an existing attack, he gives bromide of potassium in doses of gr. xv. to xx. One dose is often sufficient. As a prophylactic, he uses the (tincture of ?)cannabis Indica, a few drops thrice daily for some weeks.

Of guarana he says,—

“Thirdly, guarana has been introduced to our notice as a remedy for sick-headache, and here, again, we have a very valuable addition to our pharmacopœia. In many instances, especially those of ladies, I have had the most positive assurance given to me of the power of this drug in arresting headache, so that not the slightest doubt can be entertained of its immense value. A dose is usually taken when the headache is approaching; and if this is not quickly successful in arresting it, a second powder is swallowed; after an hour or so, if the remedy is to be useful, the headache has disappeared. I know of several cases in which the greatest enthusiasm is expressed by patients as to its merits. At the same time, I am constantly hearing of cases where it has failed. I am now trying it in smaller doses by daily administration.

“I feel certain that these three drugs—bromide of potassium, cannabis Indica, and guarana—constitute a most important addition to our nervine medicines, and that in them we have remedies against a terrible complaint which, a few years ago, constituted the opprobrium of medicine. I might say that I know of cases where galvanism has very

speedily cured a pain in the head ; and I can call to mind the case of a lady, where the application of the bisulphide of carbon invariably relieved the most severe headaches."

Hyoscyamia.—Dr. Oulmont arrives at the following conclusions in a memoir offered to the French Academy :—

1. Hyoscyamia represents all the active properties of hyoscyamus, and the fixity of the dose is a great advantage in its medicinal use.

2. The dose is two milligrammes a day in pills or hypodermically, increased to ten milligrammes.

3. It should be continued until decided symptoms of intoxication are induced ; merely slight dryness of throat and dilatation of the pupil should not cause it to be suspended.

4. It is a narcotic, influencing pain and neuralgia, but less than opium or belladonna.

5. It exerts a favorable influence on the spasmodic or convulsive neuroses ; it is very efficacious in mercurial trembling ; in paralysis agitans it is the only drug which will cause amelioration.

6. In loco-motor ataxia it is of no use. . In a case of tetanus, which however proved fatal, it seemed to cause a distinct remission.—*Revue Thérapeut.*, Dec. 1, 1872.

Aspiration in Thoracentesis.—In a lecture of some length (*Revue Thérapeut.*, Nov. 15, 1872) Dr. Potain insists upon the great value of aspiration as a method of evacuating, without danger, pleuritic fluid. No traumatism follows the use of the instrument whatever, and there is no danger of allowing the entrance of air. The needle used must be very fine.

Sulphites in Tonsillitis.—Dr. Thomas A. Elder states that during the last two years, tonsillitis has prevailed very extensively in Mifflintown, Pa., almost every one having it, and says :—

I have not met with a single case which the sulphites, administered in sufficiently large and often repeated doses, would not promptly relieve and cure. The doses which I use are those recommended by Dr Tyrrell, gr. xx. to xxx., repeated every hour, for an adult, and correspondingly large doses for children. The fever is generally dissipated in twelve hours—rarely continues twenty-four. The soreness of throat, headache, etc., are generally as promptly relieved, and forty-eight hours are sufficient for a cure. In children, when saturated, they have produced sweating, and the peculiar cadaveric hue of sulphurous acid fumes.

When the disease has progressed to the stage of exudation—when the shoe-peg points begin to appear, or later—I have never met with a case which I thought was benefited by the sulphites. I am then ac-

customed to rely upon a prescription of Prof. Miller, for diphtheria, which has almost invariably given prompt and permanent relief.

“ R Morphia muriat.....gr. ij.
 Acid, muriat., dil., }
 Tr. ferri chloridi, }āā dr. ij.
 Syrupi,.....oz. ss.
 Aquæ destillat.,.....oz. ij.

M. Sig. Dose: A teaspoonful three or four times a day after water.”

ON THE TREATMENT OF BOILS.

DR. JAMES D. MCGAUGHEY says: By some physicians the sulphate of quinine has been used empirically for a number of years, with considerable success in the majority of cases, to prevent the return of successive crops of furunculi. Some have given it as a mere tonic; but Dr. Jackson gave it with quite a different view, because it seemed to him that quinine “operated by taking away or overcoming the susceptibility to the disease.” I believe, from my own experience, that quinine given after the time has passed for aborting the pimples by an incision, will shorten the course and circumscribe the limits of furunculus. I know quinine has a remarkable control over superficial inflammations. Whenever I am attacked with common sore throat, even though it has existed for twenty-four hours, quinine liberally taken until the head feels it, continued thus for twenty-four or thirty-six hours, will remove all soreness: at least it has not failed me in five several times. I think the best plan to follow in giving quinine is—considering the aborting period to have been passed—to commence as soon as possible and make a firm impression on the system with five-grain doses, repeated every four hours until the head rings, keeping the impression up moderately by smaller and oft-repeated doses, until the boil has either suppurated or disappeared by resolution. A strict watch should be kept, so that the first pimple may be detected and incised; at the same time five or ten grains of quinine are given daily till all danger is past. No one need think he is going to be successful in circumscribing the trouble if he begins to give quinine just as supuration is commencing. The great desideratum is to make a thorough impression on the system with the drug, keeping this impression up moderately with smaller and properly regulated doses, *for a considerable length of time*, according to the requirements of each individual case. According to my experience, arsenic—Donovan’s solution, preferably—stands next to quinine.

Treatment of Chilblains.—F. Rhien recommends an aqueous solution of iodine and tannin as a remedy for chilblains. He says that the result exceeded his expectations—five applications of the remedy being successful. The application has also been tried by others, with good results when properly applied. The solution is made as follows: About an ounce of tannin is dissolved in half a pint of water; seventy-four grains of iodine are dissolved in an ounce and three-fourths of spirit of wine; the two solutions are then mixed, and enough water is added to make up the whole to two and a half pints. The remedy is applied once daily, the best time being before going to bed. The mixture is gently warmed over a very slow fire; the affected part (*e. g.*, the hand) is dipped in it while still cold, and held there until the liquid, on being stirred, feels uncomfortably hot. The vessel is then removed from the fire, and the hand is dried over it, without gloves. The vessel used must be of earthenware or porcelain, not of metal. Care should be taken not to use too great a quantity of iodine, especially when abrasions are present. According to Rhien, four or five applications are sufficient.—*Brit. Med. Journ.*, Feb. 8, 1873.

A New Antiperiodic.—M. Doran has stated in a note to the Academy of Sciences of Paris (*Comptes Rendus*), that he has never known the *Laurus nobilis* to fail in quotidian or tertian intermittents. Cases yielded to it that were fruitlessly treated by quinia. He has no doubt that in quartan ague it would be equally efficient.—*The Doctor*, Dec., 1872.

Coffee and Sulphate of Quinia.—M. Briquet considers the common practice of administering quinia in coffee open to much objection. He alleges that the tannin in the coffee coalesces with the quinia, forming a tasteless and insoluble and almost inert salt—the tannate of quinia—from which the stomach has as much difficulty in extracting quinia as from powdered bark. It is, he thinks, one of the worst preparations of quinia.—*Brit. Med. Journ.*, Feb. 8, 1873.

A Chemico-Psychological Study of Ergot. (Dorpat, 1871.) Eugene Handelin has published, on the above subject, an inaugural dissertation, an abstract of which is in *Schmidt's Jahrbücher*, No. 8, Bd. 155. He finds the watery extract of ergot far more active than the alcoholic. He thinks that the alkaloids discovered by Wenzell are not the active principles of ergot, because the solution of the watery extract of ergot, after precipitation by corrosive sublimate or tannic acid, still retains its activity. If the active principle were alkaloidal, the tannin would remove it. The physiological results obtained by Handelín are different from those of Klebs; for the former found that, with the watery extract, there was dilatation of the pupil and lessening

of the arterial pressure in spite of the increased frequency of the heart's beat, whilst the latter saw contraction of the pupil and increased arterial pressure. Handelin thinks the differences were caused by the use of different preparations.

It is very evident, however, that the subject needs further investigation.

Therapeutic Value of Silicate of Soda.—MM. Papillon and RABUTEAU recently communicated to the Academy of Sciences at Paris, a report of their interesting researches on the action of silicate of soda. The therapeutical effects of this salt are especially worthy of notice. They have recently been tested by some of the hospital surgeons here, particularly Dr. Marc Sée and Dr. Dubreuil, and the results have been very remarkable. Silicate of soda is said by them to be highly efficacious in catarrh of the bladder, where the urine tends to undergo ammoniacal fermentation, in venereal runnings, in specific ulcerations, etc. It acts in dissolving and destroying organic corpuscles, the globules of pus, and all the microscopical parasites which produce corruption. It also seems to exert a certain action on the tissues. In their communication to the Academy, the authors draw the attention of the profession to various other therapeutical properties of the salt; but they add that as yet they are not able to assert the perfect harmlessness of silicate of soda taken internally.—*Lancet*, Dec. 21, 1872.

Treatment of Cholera by Chloral.—In an article in the *Allgemeine Medic. Central Zeitung*, Dr. Blumenthal states that he and two of his colleagues treated eight cholera patients in the Riga Hospital with hydrate of chloral. With the exception of two, all recovered. In one of the fatal cases, the patient was moribund when the chloral was given; the other death occurred in a pregnant woman, aged 35. The most obvious effect of the chloral, in the cases that recovered, was early arrest of the vomiting and diarrhoea.—*British Med. Journ.*, Jan. 11, 1873.

Mode of Action of Prussic Acid.—In a paper in *L'Union*, 65, 1872, Mialhe espouses the view that prussic acid kills by destroying the power of the red blood-cells to purvey oxygen; acting on the blood as on fermenting liquids, which, in its presence, lose the power to continue the fermentation. The reason of the lightning-like rapidity of its action he believes to be that, at the temperature of the body, it volatilizes and passes into the blood by diffusion.—*Schmidt's Jahrbücher*, No. 9, 1872.

Apomorphin as an Emetic.—M. Loch has been using apomorphin by subcutaneous injection, but has obtained results not altogether so favorable as those of the earlier experimenters. In one case, the apomorphin failed to induce emesis, although it was given until “the patient could not stand on his feet.” In one case, very alarming symptoms followed the injection of a week-old solution of 0.008 grammes. M. Loch’s paper is in the *Berlin Klin. Wochensch.* IX., 1872; an abstract of it in *Schmidt’s Jahrbücher*, No. 9, 1872.

Salts of the Alkaloids with the Bile Acids.—In *Schmidt’s Jahrbücher*, No. 8, Bd. 155, is an abstract of Franz de l’Arbre inaugural dissertation on the salts formed by the alkaloids with the bile acids. All of these salts are soluble in an excess of the bile; some of them are soluble, others insoluble, in water.

Digitaline.—Ch. Blaquart, in a recent inaugural thesis on digitaline, arrives at the following conclusions:—

Crystallizable digitaline exists in digitalis in the proportion of 10 to 12 parts per hundred, and that nearly 10 per cent. has been extracted from the drug.

There are two distinct substances—amorphous and crystallizable digitaline.

As M. Roucher has shown, crystallizable digitaline may be volatilized. This property may be of use in toxicological examinations.

The crystallizable digitaline acts like a glucoside.

The crystallizable and the amorphous digitaline acts in the same manner upon cold and hot blooded animals.

That there is but little difference in activity between commercial, amorphous, and crystallizable digitaline.

M. Blaquart does not think crystallizable digitaline offers any marked advantages over the digitaline of the French codex; whilst the method of its manufacture is exceedingly complex and laborious.—*L’Union Pharmaceutique*, Nov., 1872.

The Treatment of Prurigo and Pruritus by Carbolic Acid.—Dr. Rothmund (*Ärztl. Intelligensblatt*, 39, 1872) states that the internal administration of carbolic acid in pruritus excels every other method. He has tried also the hypodermic injection of it with marked success, there being no local irritation produced as one would expect beforehand. Solutions of pure carbolic acid seem to be more efficacious than those of carbolate of soda.—*The (London) Medical Record*, Jan. 22, 1873.

Poisoning by Strychnia, successfully treated with Hydrate of Chloral.—By S. S. TURNER, M.D., of Grand River, Dakota.

At noon, April 28, 1872, I was called to see L., æt. 40, who was reported to have been poisoned with strychnia (quantity unknown), by wife—cause, jealousy.

All the usual symptoms ascribed to poisoning by strychnia were present, and well marked. Gave chloral gr. xxx. In about thirty minutes there was marked abatement in the severity of the convulsions, and improvement in vision. In thirty minutes more a violent convulsion ensued, and fifteen grains of chloral were given with the effect, in a short time, of inducing freedom from convulsions, which lasted. Half an hour afterwards convulsions again returning, I gave chloral gr. xxx. Relief followed quickly, and the patient remained tranquil for three hours, when slight spasm recurring, another dose, gr. xxx., of the drug was administered.

No further convulsions occurred. The patient slept all night, and on the following day complained only of extreme muscular soreness, which was mitigated by chloral hydrate in reduced quantity.

OLEATES OF MERCURY AND MORPHINE IN OBSTINATE INFLAMMATION.

MR. JNO. MARSHALL (London *Lancet*) commends these substances very highly as local applications in inflammation. He says (*inter alia*): "The oleates are prepared by adding the oxide of mercury, recently made and well dried, to oleic acid, aided by a temperature of 300° F. The strength of the preparations used is indicated by the percentage of the oxide of mercury which they contain. The five-per-cent. solution is a clear, pale-yellow liquid, resembling olive-oil, but thinner; the ten-per-cent. solution is also fluid and perfectly clear, but as dark as linseed-oil; while the twenty-per-cent. preparation is an opaque, yellowish, unctuous substance, closely resembling in appearance resin ointment, melting very readily at the temperature of the body, and forming a kind of transparent viscid, colorless varnish when applied to the skin. The chief care to be observed in the manufacture of these solutions is not to hurry the process, and not to employ a high temperature, or the mercury will be immediately reduced.

"Unlike the mercurial ointment so long in vogue, which is a crude, gross, unscientific mixture, very dirty and very wasteful, because so small a proportion of its mechanically-admixed mercury is but slowly absorbed, these solutions of oleate of mercury are cleanly and econom-

ical in use ; and as the diffusibility or penetrating power of oleic acid is much greater than that of ordinary oils or fats, and as each one-thousandth part of even a minim of these preparations contains its proper modicum of mercury, they are absorbed by the skin with remarkable facility, and manifest their remedial effects with great promptitude. They should not be rubbed in like ordinary liniments or embrocations, but should be *merely applied with a brush, or be spread lightly over the part with one finger* ; otherwise they may cause cutaneous irritation, or even produce a few pustules on the skin, especially in certain persons. This result may, however, be obviated by the addition of a small quantity of olive-oil or purified lard, according as an oleaginous or an unctuous preparation is required. Any of these forms may be scented by the addition of essential oils.

“ In employing these mercurial solutions for combating persistent inflammation of joints, I soon found that the addition of morphia was of very great advantage. For this purpose the simple alkaloid must be used, as neither the hydrochlorate, the acetate, nor the meconate is soluble in oleic acid. For every drachm of the solution of oleate of mercury in oleic acid one grain of morphia may be added. Being, as well as the mercury, completely dissolved, it quite as rapidly penetrates the skin, comes quickly into contact with the extremities of the nerves, and thus, even within a few minutes, acts upon them at their most sensitive points, and speedily produces a soothing effect.

“ The oleates of mercury and morphia, thus united in one preparation, represent, as it were, a liniment, ointment, or plaster of mercury and opium ; but they are far more elegant, economical, and efficacious. As a rule, according to the size of the part affected, from ten to thirty drops are sufficient for one application. This should be repeated twice daily for four or five days, then at night only for four or five other days, and afterward every other day, until a cure is obtained.

“ Unless used in excessive quantity, the oleate of mercury does not salivate or produce any marked constitutional disorder.

“ I may mention that not only in persistent articular inflammation, but also in simple synovitis, these remedies rapidly relieve the tenderness and pain, and promote the absorption of the fluid effused into a joint. They are also of decided benefit in the rheumatic, the arthritic, and the mixed forms of joint disease ; but in these they do not of course supersede the necessity for general treatment. In inflammation of the mammary gland occurring during or after lactation, or altogether independently of that secreting process, their efficacy is unequivocal ; for I have seen not only the induration left after previous abscesses speedily disappear under their use, but a tendency to recurrent suppuration in the site of old abscesses, and the threatened formation of new

ones, entirely controlled and arrested. I have also seen a threatened absence in the perinæum from inflammation of one of Cowper's glands, and likewise the troublesome indurations left after ordinary perineal abscess, rapidly disappear on the use of these preparations. In obstinate and painful tonsillitis, in epididymitis, in periostitis, and in inflammation with imminent or actual suppuration in or around lymphatic glands, I have similarly employed them with decided advantage. In hydrocele they have not appeared to be useful. I have used equal parts of the twenty-per-cent. ointment and purified lard applied outside the eyelid, with success, in hordeolum and in palpebral conjunctivitis.

"In many cutaneous affections the oleate of mercury solutions, without morphia, form elegant and powerful remedies. In obstinate sycosis menti I prefer the five-per-cent. solution of oleate of mercury in oleic acid, with the addition of an eighth part of ether. This, when applied to the skin with a camel's-hair pencil, is a most diffuent and penetrating remedy. It enters the hair-follicles and the sebaceous glands, penetrates the hairs themselves, and carries everywhere with it its powerful metallic constituent. Besides sycosis, it will cure chloasma and the various forms of tinea. It is useful in porrigo and in pruritis ani et pudendi; but I have not found it serviceable in non-specific psoriasis or in eczema. The solution of oleate of mercury destroys pediculi immediately; and, owing to its singular power of permeation, simultaneously kills the ova.

"Again, in many of those syphilitic affections for the cure of which mercury is applicable, the oleate-of-mercury preparations offer some advantages. Thus, in congenital syphilis, a piece of the twenty-per-cent. ointment about the size of a pea or bean placed in the child's axillæ night and morning for five or six days, rapidly and easily, and without any sign of uncleanness, produces constitutional effects.

A Remedy for Colds.—Dr. Dobell, in his work on Winter Cough, declares that *colds can be stopped without lying in bed, staying at home, or in any way interfering with business—provided the treatment be begun directly the first signs of catarrh show themselves in the nose, eyes, throat, or chest.* When the cold has become established it will not answer. The treatment is as follows: 1. Give five grains of sesquicarbonate of ammonia and five minims of liquor morphiæ, in an ounce of almond emulsion every three hours. 2. At night give an ounce and a half of liquor ammoniæ acetatis in a tumbler of cold water, after the patient has got into bed and been covered up with several extra blankets; cold water to be drunk freely during the night should the patient be thirsty. 3. In the morning the extra

blankets should be removed so as to allow the skin to cool down before getting up. 4. Let him get up as usual and take his usual diet, but continue the ammonia and morphia mixture every four hours. 5. At bed-time the second night give a colocynth pill. No more than twelve doses of the mixture from first to last need be taken, as a rule; but should the catarrh seem disposed to come back after leaving off the medicine for a day, another six doses may be taken and another pill. During the treatment the patient should live a little better than usual, and on leaving it off should take an extra glass of wine for a day or two.

Tetanus, Bromide of Potassium in—Curare in.—Dr. Ponas (*Gazette Hebdomadaire*, No. 26, 1872), reports a case of traumatic tetanus occurring in a man twenty-one years of age and of feeble constitution, and ending in recovery under the use of opium and bromide of potassium.

Dr. Galte also reports a case (*L'Independente*, Sept., 1872, and *Bordeaux Med.*, October, 1872), in which he used with a successful result hypodermic injections of curare: 85 centigrammes of the curare were used in 25 injections spread over 15 days.

Influence of Cold Water on the Spleen.—In the number of *Virchow's Archives* for February 21, 1873, Prof. F. Mosler, of Greifswalde, has an elaborate paper upon the above subject, in which he arrives at the following conclusions:—

1. The immediate contact of cold water upon the normal spleen caused a contraction, which is proportionate to the coldness of the water and the duration of the contact.

2. In a lesser degree cold water acts upon the normal spleen, through the abdominal wall. This influence is more marked when the water is applied by means of the douche than when simple compresses are used, and is less than the contraction caused by quinia.

3. Upon the enlarged spleen, acute or chronic, the cold water also acts.

4. The paroxysm of intermittent fever can, by means of the cold douche, after the manner of Fleury, be set aside.

5. The cold douche deserves neither in recent nor chronic intermittent the preference over quinia. It does not hinder the return or the formation of a splenic tumor any more than quinia.

6. The cold douche lessens the spleen of typhus.

7. A combination of the use of cold water upon the spleen, either in the form of baths, ice-bladders, or the cold douche, and of quinia or quinoidine, constitutes the best treatment for both the acute and chronic forms of splenic tumor.

MATERIA MEDICA.

A NEW SOLVENT FOR IODIDE OF LEAD.

DR. DONATI TOMASI has discovered that the acetate of soda has the power of rendering iodide of lead soluble in water without the formation of a double salt. Thus fifty cubic centimetres of a concentrated solution of the acetate will dissolve, when cold, 15.34 grs. of the iodide; when boiling, 31 grains. A few drops of acetic acid increase the capability of the liquid to dissolve the iodide, but the addition of a large amount of the acid has no further effect. Thus fifty c. c. of the solution previously used will, with the addition of a fifth of a cubic centimetre of acetic acid, dissolve cold 92 grains, and hot 122 grains. Taking advantage of these facts, the crystallized iodide of lead is readily prepared thus:—

Take of distilled water 100 parts, by weight.

Acetate of soda 160 parts.

Acetic acid some drops, and dissolve.

Make 8 parts of the iodide into a sort of paste with a little water. Add this, with constant stirring, little by little, to the previous solution whilst boiling, and, when it is dissolved, set aside to cool. After twelve hours add a little cold water, and from time to time larger quantities of the same, till the iodide of lead is all precipitated. Collect the crystals on a filter and wash.

Again, Dr. Tomasi's discovery may be taken advantage of in detecting the adulteration of the iodide of lead with the chromate. Thus heat, during 15 minutes, seven and a half grains of the suspected iodide in 50 c. c. of concentrated solution of acetate of soda, acidulated with a few drops of acetic acid. If the iodide be pure it entirely dissolves. If any chromate be present it will be left behind on filtration. The iodide of lead is very slightly soluble in pure glycerine, but in the following way a concentrated solution can be made for external use:—

Take of Saturated solution of acetate of soda . . 15 cubic centim.

Glycerine 25 “ “

Iodide of lead 0.4 gramme.

Rose-water some drops.

Mix, and thoroughly rub together in a porcelain mortar. If this glycerole be too viscid, some distilled water may be added.—*Sur un Nouveau Dissolvant de l'Iodure Plombique*, Paris, 1872.

CONTRACTION OF ALCOHOL.

THE following tables are taken from a paper published by E. B. Shuttleworth in the *Canadian Pharmaceutical Journal* for February, 1872:—

Table Exhibiting the Volumes which 100 Gallons of Alcohol, 65 Over-proof, at 60° F., will have when Measured at Different Temperatures.

TEMPERATURE.		Volume of Spirit.
Centigrade.	Fahrenheit.	
15.55°	60°	100.0
12.77	55	99.7
10.00	50	99.4
7.22	45	99.2
4.44	40	98.8
1.66	35	98.6
— 1.11	30	98.3
— 3.88	25	98.0
— 6.66	20	97.6
— 9.44	15	97.3
—12.22	10	97.0
—15.00	5	96.6
—17.77	0	96.3
—20.55	— 5	96.0
—23.33	—10	95.7
—26.11	—15	95.4
—28.88	—20	95.2

Sprains.—The immovable apparatus is usually applied at once. Immersing the limb in hot water, permitting it to remain for some time, and then applying a snug roller, is a most excellent mode of treatment.—Bellevue Hospital Reports, *New York Medical Record*.

Table Showing the Contraction of Alcohol in every Five Degrees, from its Boiling-Point to Zero C. (Gay Lussac.)

TEMPERATURE.		Volume of the Alcohol.
Centigrade.	Fahrenheit.	
74.14°	173°	1000.0
73. 4	164	994.4
68. 4	155	988.6
63. 4	146	982.5
58. 4	137	975.7
53. 4	128	970.8
48. 4	119	965.8
43. 4	110	960.7
38. 4	101	954.8
33. 4	92	949.1
28. 4	83	944.0
23. 4	74	939.0
18. 4	65	934.0
13. 4	56	929.8
8. 4	47	924.5
3. 4	38	919.9

ON THE MANUFACTURE OF ABSOLUTE ALCOHOL.

MENDELJEFF states that unslaked lime offers the best material for abstracting all the water from alcohol. He states that the lime must be in greater bulk than the alcohol, which must possess at least a sp. gr. of 0.792 at 20° C. After two days all the water will be withdrawn. If, however, it is desired to distill after two or three hours, the mixture must be heated for half an hour to a temperature of 50° C. In this way, however, only the middle portions of the distillate are free from water. Erlenmeyer has modified this process, in that he boils the mixture in a retort with a return still from $\frac{1}{2}$ to 1 hour, then disconnects the return-tube and distills off the alcohol. In this method all of the distillate is free from water. If the spirits of wine used contain more than 5 per cent. of water, it is necessary to repeat the process two or three times.

If very much water be present, the receiving-retort should also be filled with lime. In this way many gallons of ordinary alcohol may, in a few hours, be converted into the absolute alcohol.—*Zeitschrift des Allgem. Oester. Apothek-Vereins*, Feb. 1, 1872.

TABLE OF THE ALKALOIDAL SUBSTANCES PREPARED FROM ACONITE.

The following table has been arranged from a paper by M. Duquesnel (elsewhere quoted, see *Toxicology*), in *L'Union Pharmaceutique* for February, 1872.

No. 1. CRYSTALLIZED ACONITIA	No. 2. ACONITIA OF THE FR. CODEX (<i>Hottel</i>).	No. 3. ACONITIA OF COMMERCE.	No. 4. NAPELLINA (<i>Morson</i>).	No. 5. NAPELLINA (<i>Hübemann</i>).	No. 6. ACONELLINA (<i>T. and H. Smith</i>).
Rhombic tables, or rarely prismatic crystals, without water of crystallization, forming crystallisable salts, unaltered at 100° C.	Amorphous, white, hydrated with 20 per cent of water, fusible at 80°, and parting with its water of crystallization to be converted into a resinoid mass.	Similar in physical character to preceding, but much less pure and active, and more variable.	Voluminous crystals of a watery (serous) aspect. Much less active than No. 2.	Amorphous resinoid appearance, alkaline, soluble, slightly hygroscopic, insoluble in ether and chloroform. A narcotic principle?	Crystals which form in the acidulated extractive liquor of aconite root, prepared for the extraction of aconitia, and incompletely neutralized by the carbonate of soda, after two or three days' repose. They seem to be closely allied to <i>narcelina</i> , as they strike a red color with sulphuric acid containing a small portion of nitric acid and share none of the physiological properties of aconitina.

ORANGE TEA.

THE Chinese scent their teas with orange-flowers. The method has been thus described :—"In a corner of the building there lay a large heap of orange-flowers, which filled the air with the most delicious perfume. A man was engaged in sifting them, to get out the stamens and other smaller portions of the flower. This process was necessary, in order that the flowers might be readily sifted out of the tea after the scenting had been accomplished. The orange-flowers being fully expanded, the large petals were easily separated from the stamens and smaller ones. In one hundred parts seventy per cent. were used and thirty thrown away. When the orange is used its flowers must be fully expanded, in order to bring out the scent. When the flowers had been sifted over in the manner described, they were ready for use. In the mean time, the tea to be scented had been carefully manipulated, and appeared perfectly dried and finished. At this stage of the process it is worthy of observing that, while the tea was perfectly dry, the orange-flowers were just as they had been gathered from the trees. Large quantities of the tea were now mixed up with the flowers, in the proportion of forty pounds of flowers to one hundred pounds of tea.

"This *dry tea* and the *undried flowers* were allowed to be mixed together for the space of twenty-four hours. At the end of this time the flowers were sifted out of the tea, and, by the repeated sifting and winnowing process which the tea had afterwards to undergo, they were nearly all got rid of."—*Good Health*.

PREPARATION OF PEPSIN.

DR. LIONEL BEALE states that after many experiments he has settled upon the following method of preparing pepsin as the most feasible :—

Dissect off carefully the mucous membrane of a *perfectly fresh* pig's stomach, and place it on a flat board, cleanse it lightly with a sponge and water, so as to remove the particles of food and much of the mucus. Scrape it hard with an ivory knife, so as to squeeze out all the contents from the glands. The viscid mucus thus obtained contains all the pepsin with much epithelium. Spread it upon a piece of glass so as to form a very thin layer, which is to be dried at a temperature of 100° (no higher) F. over hot water, or in vacuo over sulphuric acid. When dry scrape from the glass, powder in a mortar, and trans-

fer to a well-stoppered bottle. With this a good digestive fluid may be prepared as follows:—

Take of Powder..... 5 grains.
 Strong muriatic acid.....18 drops.
 Water..... 6 ounces.

Macerate at a temperature of 100° for an hour; filter, so as to form a perfectly clear fluid.

The powder may also itself be administered in doses of from 2 to 5 grains, a little dilute hydrochloric acid being taken at the same time. The powder is odorless, and, taken with a little salt, tasteless. If kept dry, it will remain unchanged for a long time.

Pepsin prepared in this way is exceedingly active. Dr. Tuson found it 25 times stronger than the ordinary commercial brands.—*Medical Times and Gazette*.

PASTE OF PAPER AS A CLARIFIER OF SUGAR.

IN *l'Union Pharmaceutique* for March, 1872, M. Magnes-Lahens contends for the superiority of paper to albumen as a means of clarifying syrups. He states his formula and method for simple syrup are as follows:—

Take of Sugar, in pound lumps....20,000 gr.
 Water.....10,000 gr.
 White filtering paper..... 24 gr.

A straining *muslin* bag of capacity of 8 to 9 litres.

Put the water, after having rubbed the paper up in it, in a large vessel, add the sugar, and heat, with constant stirring, until the temperature of 35° to 40° C. is reached and the sugar dissolved. Strain. After all has passed through the filter the felty mass still retains some 500 grammes. After impregnating the filter with a sufficient quantity of boiling water, express strongly, bring the sweet liquid to a syrupy consistency, add some paste of paper, and strain through a small filter-bag; in this way the waste is reduced to a minimum.

M. Magnes-Lahens says that this process is applicable to all syrups, giving greater clearness with greater rapidity than any other method in use. In all the syrups made from vegetable preparations, as decoctions, extracts, etc., the results of the use of paper paste is especially brilliant, much better than those of the ordinary filtering through paper; the time taken is much shorter and the resulting liquid much clearer.

He also states that the honeys and the oxymels are best prepared by this plan.

In the process the points to be attended to are—

1. The strainer must be cotton, not wool, and should represent in capacity a third part of the liquid to be acted on.
2. One gramme of paper suffices for one litre of water.
3. The paper must be unsized, white, and of good quality, and thoroughly reduced to a paste.
4. The syrup should be heated to 40° C. and not beyond it.

ON THE PREPARATION OF CHRYSAMMIC ACID AND CHRYSAMMATES.

MR. WILLIAM A. TILDEN gives the following methods in *Pharmaceutical Journal and Trans.* of April 20 :—Fine Barbadoes aloes must be selected; and the variety which has a rich brown, not dark, color and powerful odor, yields the best result. One part of such aloes is dissolved by agitation with seven or eight parts of boiling water, slightly acidulated with hydrochloric acid. The solution is allowed to cool and to remain at rest for twenty-four hours, when it may be strained to remove the deposited resin. It is then evaporated down in an open dish till a syrupy consistence is attained, and there remains rather less than two parts of liquid. This, set aside for a day or two, solidifies in consequence of the formation of a mass of granular crystals. The whole is drained in a calico bag, and then submitted to gradually increasing pressure till entirely free from the black mother-liquor. In this way a lemon-yellow mass of barbaloin results, which amounts to from 20 to 25 per cent. of the aloes if a proper selection has been made. To render it quite pure, it requires one or two crystallizations from rectified spirit, but for the preparation of chrysammic acid this is unnecessary. It has only to be dried and powdered and introduced in small portions into about six times its weight of fuming nitric acid (sp. g. 1.45), kept cool. After standing a few hours, about half its volume of water is added and heat applied until, in consequence of the formation of deposit, the liquid bumps. During this digestion, a considerable quantity of carbonic anhydride escapes with the nitrous fumes. A further quantity of water is then added, and when cold the bright yellow crystalline deposit of aloetic and chrysammic acids filtered off. The liquid retains oxalic and picric acids, together with a small quantity of aloetic acid, which may be recovered by distilling away the nitric acid and washing the residue with water. The mix-

ture of aloetic and chrysammic acids thus obtained is dried and boiled gently for eight or ten hours with sufficient nitric acid to cover it. Water is again added, and the crystalline precipitate collected and washed till the washings become pink. It is then boiled for an hour with about an equal weight of potassic acetate dissolved in fifty parts of water. The solution thus obtained deposits on standing a copious crystallization of green sparkling potassic chrysammate, which may be washed with a little cold water. The mother-liquors, which retain potassic aloetate, are evaporated down, acidified by nitric acid, and the aloetic acid converted into chrysammic acid by further treatment with nitric acid, as already described.

Proceeding in this way, barbaloin readily yields more than a third of its weight of pure potassic chrysammate.

CHRYSAMMIC ACID.

Crystals of chrysammic acid are best obtained by dissolving potassic chrysammate in a considerable quantity of boiling water, and strongly acidifying the liquid with acetic acid. Thin yellow fern-leaves, a quarter of an inch long, mixed with a few long red crystals, are deposited in a few hours. On warming the whole gently, the latter are redissolved, and the yellow fern-leaves which are mixed with a few much smaller tables may be filtered off and washed. They consist of pure chrysammic acid; in mass they strongly resemble picric acid, but are more lustrous.

After exposure to dry air at ordinary temperatures for a few days, they suffer no loss of weight by heating to 150°C. Evaporated with pure sulphuric acid, they leave no residue.

LEAD CHRYSAMMATE.

Described by Schunck and Mulder as a red powder containing variable proportions of lead. It may easily be obtained, however, beautifully crystallized, by mixing a boiling solution of potassic chrysammate with a slight excess of plumbic acetate dissolved in boiling water and acidified with acetic acid. On cooling, long thin prisms, exhibiting a magnificent bronze reflection, are formed. The light transmitted by the crystals is pale red and strongly polarized, so that on viewing, by means of a lens, some of them suspended in the mother-liquor, the light is seen to be completely cut off, when two of them cross each other at right angles. Mounted properly, they form a pretty microscopic object.

Animal Starch.—In the *Vierteljahresschrift für prakt. Pharmacie* of April 1, 1873, is an abstract of a paper by C. Daveste on the above subject, originally published in the *Journ. de Pharm. et de Chim.*, Sept., 1871–72. M. Daveste asserts that he has found a substance which in physical and chemical character is identical with starch in the yolk of the hen's egg.

DETECTION OF ADULTERATION OF OIL OF EUCA- LYPTUS.

BY H. DUQUESNEL.

THERE are four adulterations practised :—

1. By alcohol.
2. By fixed oil.
3. By oil of turpentine.
4. By another volatile oil, as of copaiba, decolorized, and, as far as possible, deodorized.

1. To detect alcohol, mix the suspected oil with its bulk of water in a graduated tube, and agitate. On standing the liquids separate, and the increase of bulk in the water indicates with sufficient accuracy the amount of alcohol present.

Fuchsine, or aniline, affords a still better test for very small quantities of alcohol, for if the latter be present the liquid acquires a more or less deep red color, according to proportion of the alcohol; if it be absent the original color is maintained.

2. To detect a falsification by a fixed oil: Drop on paper in the usual way, or distil a little of the oil on water.

3. Oil of turpentine.—Even as much as twenty-five parts in one hundred of the oil of turpentine may be added to the essential oil of eucalyptus without being perceptible to the smell, and hitherto no good method of detecting the adulteration has been devised.

After stating that neither density nor effect of polarized light is of avail in detecting this fraud, M. Duquesnel says that the boiling-point may be used, and gives the following table :—

Pure non-recti- fied oil.	Pure rectified oil.	Impure oil.				
		5 per cent.	10 per cent.	15 per cent.	20 per cent.	25 per cent.
169°–171°	169°–171°	169°	168°–169°	167°–168°	167°	166°–167°

To detect the oil of turpentine in this way requires, however, a certain amount of practice, besides a very sensitive thermometer, or a little distillatory apparatus, composed of a small tube, in the bottom

of which is placed one or two cubic centimetres of the suspected essence. This tube is so arranged that a thermometer fixed in the cork that closes the orifice of the tube, will be bathed only in the vapor escaping through a small tube set in the cork.

A more easy method is offered by the chemical reactions of iodine. The oil of turpentine, treated with iodine, gives origin to a slight explosion, accompanied by the disengagement of purple vapors. Oil of eucalyptus has not this property. The following table indicates the sensitiveness and value of this test:—

Powdered iodine, 0.15. Oil, 3 drops.

Pure oil, non-rectified.	Pure oil, rectified.	Impure Oils.				
		5 per cent.	10 per cent.	15 per cent.	20 per cent.	25 per cent.
None.	None.	Evident explosion.	Explosion more pronounced.	Explosion still more pronounced.	Explosion more violent.	Explosion violent.

Still another and more rapid and surer means of detecting the turpentine is by examining the solubility in alcohol. The strength of the latter should be 73 degrees, at a temperature of 14° (C.). To dissolve one cubic centimetre it is necessary to add of the alcohol—

Pure oil, non-rectified.	Pure oil, rectified.	Impure oil.				
		5 per cent.	10 per cent.	15 per cent.	20 per cent.	25 per cent.
Alcohol, 1.6 cc.	1.6 cc.	1.90 cc.	4 cc.	6.5 cc.	14. cc.	16. cc.

4. Copaiba.—This adulteration is best detected by studying the boiling-point; the temperature at which ebullition occurs being for copaiba 260°; for oil of eucalyptus, 169° to 171°. The solubility in alcohol can also be employed as a means of testing.—*L'Union Pharmaceutique*, March, 1872.

BASIC AND NEUTRAL BROMO-HYDRATES OF QUINIA AND OF CINCHONIA.

BY M. LATOUR.

HEAT in a matrass of glass a mixture of

Bibasic sulphate of quinia..... 10 parts.

Alcohol at 85° 50 “

then add a solution—

Bromide of potas..... 8 “

Distilled water..... 20 “

Diluted sulphuric acid (1 part to 100)..... 10 “

Boil, and after some minutes filter to separate the sulphate of potassa; wash this salt with hot alcohol, mix the alcohol, concentrate to a very small quantity by heat, and set aside to crystallize. At the end of twenty-four hours remove from the crystals the liquid by bibulous paper; the resultant is a *neutral salt*.

For a *basic* salt the following proportions are used:—

Sulphate of quinia (bibasic).....	10 parts.
Alcohol at 85°	50 “
Bromide of potassium.....	5 “
Distilled water.....	20 “

Neutral Bromo-hydrate of Cinchonia.—The following proportions are used:—

Sulphate of cinchonia (bibasic).....	10 parts.
Alcohol at 85°	50 “
Bromide of potassium.....	8 “
Water.....	10 “
Dilute sulphuric acid (1 to 100).....	20 “

—*L'Union Pharmaceutique*, May, 1872.

ON THE SOLUBILITY OF SOME SALTS OF QUININE.

IN *L'Union Pharmaceutique* (April and May), M. Schlagdenhaufen has an elaborate paper with the above caption, from which we abstract the following table:—

Quantity dissolved in one cubic centimetre.

Name of Salt.	Temperature (C.).		
	30°.	20°.	10°.
Acetate	0.091	0.037	0.027
Chlorohydrate	0.003	0.049	0.031
Hypophosphite.....	0.12	0.097	0.065
Formiate.....	0.33	0.296	0.273
Lactate	0.35	0.31	0.29
Sulphomethylate.....	0.80	0.71	0.60
Sulphovinate.....	0.80	0.72	0.60

EMULSIONS.

M. ROTHER has a paper in the *Pharmacist* with the above caption. In it, after some preliminaries, he condemns entirely the process of shaking in a bottle, also that in which sugar, gum, and oil are all rub-

bed together in a mortar, and then water gradually added in small portions, with constant trituration. He then remarks:—

By a third process, devised by Overbeck, given in a note to the U. S. Dispensatory, and also recommended by Mohr in his "Pharmaceutical Technics," a definite quantity of oil, gum, and water, in proportions adjusted according to the nature of the oil that is employed, is all rubbed up at once in a mortar, and, when the proper union has taken place, more water is gradually added. This method is quite good, and yields very few failures, where the oil does not exceed two fluid ounces, but with four fluid ounces of oil in one quantity the process becomes precarious.

A fourth method is given in the U. S. Dispensatory. According to it the gum is first mixed with water, in the same proportion as it exists in the officinal mucilage of the Pharmacopœia; the oil then added, mixed and diluted with the prescribed amount of water. In this case the oil is usually added in a thin but continuous stream with rapid stirring. This process is nearly as good as the preceding one, but often the emulsion is not as perfect as it should be.

These operations have mostly reference to the fixed oils and balsams, and are not equally applicable to the volatile oils, which, as a class, are much more difficult to emulsify. Experience demonstrates that the thicker and more viscid the oil the easier it is emulsified. The volatile oils, owing to their great mobility, are the most difficult to overcome. Castor oil and oil of turpentine are typical of these opposite extremes.

Thus it becomes evident from the disconnection and dissimilarity of these methods, that the true principle upon which the process of emulsification depends has been either entirely unknown or completely disregarded. A perfect emulsion is characterized by its dazzling whiteness, its uniformity, and the property which admits of its dilution to even an extraordinary extent without destroying its appearance or identity. The incipient or complete emulsion, in its most concentrated form, from the moment of its generation, is unmistakably distinguished by its whiteness, and the peculiar tenacity which causes the pestle, when moved through it, to give the characteristic crackling sound of the emulsion; when these indications evince themselves the success of the operation is assured.

Now the writer observed that by following Overbeck's method, and using a broad mortar, if the trituration be confined to a narrow space for a moment until perfect emulsification has taken place, even in a small portion of the material, and then gradually bringing the rest of it within this centre, a perfect emulsion was invariably attained. Applying this manner of manipulation in the process of the U. S. Dispensatory, that is, instead of pouring the oil upon the mucilage in a

continuous stream, adding only a small portion at first ; this, with the large proportion of mucilage, never fails to emulsify. The remainder of the oil is then added in small quantities at a time, and each perfectly emulsified before introducing the next. Finally, the perfect emulsion is diluted to the required measure. The writer now further observed that when the proportion of oil was great, in comparison to the mucilage, a time would arrive during the addition of the oil when this ceased to merge with the emulsion ; in no instance, however, was the previously-formed emulsion ever disintegrated or deranged. Therefore, it was assumed that the inaction originated in a deficiency of water, consequently this addition was made, and complete emulsification again and immediately resulted. The addition of oil was then continued, occasionally adding water, as the mucilage could at any period of the operation be diluted with water to any desirable volume without decomposition. This principle was now applied to oil of turpentine, assumed to be the most refractory in the category of oils.

Two fluid drachms of officinal mucilage of acacia was placed into a broad, conveniently-sized mortar, and diluted with one fluid drachm of water. Half a fluid drachm of oil of turpentine was then added, and the whole triturated a few moments until the oil was emulsified. One and a half drachms of oil was then added in half-drachm portions, emulsifying each before adding the next : this was followed by one drachm of water. Five fluid drachms of oil was now introduced in the same manner as before, and again followed by half a drachm of water. After this three drachms of oil were again incorporated as above, and still the emulsion retained its perfect appearance, and ever ready to extinguish quantities of oil to an almost unlimited extent. However, this was not required, and therefore the incorporation of oil was here discontinued, and the emulsion diluted with water.

Upon these deductions the following theory is established :—A concentrated, perfect emulsion is in itself the most rapid and efficient emulsifier, and possesses the property of emulsifying oil to an almost unlimited extent.

This theory is expressed in the following rule for the emulsion :—

Introduce the emulsifier into a broad, conveniently-sized mortar ; this may be already a perfect emulsion, as the yolk of eggs, but if it is gum this must be in the form of mucilage, either thick or thin, according to the nature of the oil. Now pour in a small quantity of oil, and triturate this with the mucilage until a perfect emulsion has formed, then add the rest of the oil in small portions at a time, and not until the previous addition has been perfectly emulsified, adding small quantities of water at intervals, as the indications may require. Finally, when all the oil has been incorporated, gradually add the pre-

scribed volume of diluent. When both a fixed and volatile oil are prescribed in an emulsion, the fixed oil must be emulsified first before the addition of the other.

In the *Pharmaceutical Journal* of May 25th, Mr. T. H. Hartwick says:—

Mr. Rother has made known a perfect method of preparing an emulsion of turpentine with mucilage, hitherto, at the best, but an unsatisfactory performance; there is, however, one point essential to insure complete success, which has apparently escaped his attention, and that is the use of fresh mucilage.

TO PREPARE EXTRACT OF LICORICE.

R. ROTHER.

Liquid extract of licorice-root is prepared by exhausting the root in coarse powder, by means of percolation, with a menstruum consisting of alcohol $\frac{1}{4}$ or $\frac{1}{3}$, and water $\frac{2}{3}$ or $\frac{4}{5}$, with about 2 fluid drachms of about 16 or 18 per cent. ammonia-water in each pint of the mixture. The percolate is heated to boiling, to precipitate the dissolved albumen, and filtered hot; the residue on the filter is washed with hot water and the filtrate evaporated to half the weight employed. This process may further be stated as follows:—

Take of licorice-root in No. 20 or 24 powder, 32 troy ounces.

Alcohol one pint.

Water sufficient.

Water of ammonia (16 or 18 per cent.), $1\frac{1}{2}$ fluid ounce.

Mix the alcohol with 5 pints of water and add the ammonia. Moisten the powder with six fluid ounces of the mixture, pack firmly in a cylindrical percolator, forming a column of medium height, and pour on the remainder of the mixture, and then water until six pints of percolate have passed; heat this to the boiling-point and filter; when the liquid has disappeared from the surface mix the residue with a pint of water, heat and filter; mix the filtrates and evaporate.

BRANDY FROM WOOD-SHAVINGS.

C. G. ZETTERLUND has been making some experiments in the distillery at Hulta to make brandy out of shavings. For this purpose they were boiled in an ordinary kettle under a pressure of 0.116 kilo-

grammes of steam to the square centimetre. There was then put into the kettle:—

Shavings (pine and fir, very wet).....	9.0 cwt.
Sulphuric acid, 1.18 sp. gr.....	0.7 cwt.
Water	30.7 cwt.
<hr/>	
Total.....	40.4 cwt.

After boiling eight and a half hours the mass of shavings contained 3.33 per cent. grape-sugar, and after eleven hours' cooking 4.38 per cent. A further increase in the quantity of sugar could not be attained. There was attained in all, from the 40.4 cwt., about 1.77 cwt. of grape sugar, or about 19.67 per cent. of the weight of the shavings. The acid was neutralized by lime, so that the cooled mash ready for fermentation contained one-half degree of acid, according to Ludersdorff's acid tester. The mash had a temperature of 30° C. when the yeast, prepared from only 20 pounds of malt, was added. At the end of ninety-six hours the mash was done fermenting, was then distilled, and yielded 61 quarts of 50 per cent. brandy at +50° C., perfectly free from all smell or flavor of turpentine, and of a very pure taste. It is more than probable that the manufacture of brandy from shavings on a large scale would succeed if it were ascertained by experiment with how much water the acid must be diluted and how long it must be boiled; for both of these circumstances exert a great influence over the production of the sugar. If it were possible to convert the whole of the cellulose in the shavings into sugar, each hundred weight of air-dried shavings would yield about seven gallons of brandy of 50 per cent. The shavings of the leaf-bearing trees would probably give the best results.—*Jour. of App. Chem.*

SOLUBILITY OF BISULPHIDE OF CARBON IN WATER.

F. SESTINI (*Gazet. Chim. Ital. in Jour. Chem. Soc.*) states that carbon bisulphide is not quite insoluble in water. After several days' contact, at ordinary temperatures, water takes up about one part in 1,000 of its weight of this compound, a very small quantity at the same time undergoing decomposition. The aqueous solution, when distilled, gives up the carbon bisulphide unaltered, at the commencement of the distillation. It has the odor of the compound, a slight burning taste, and does not contain more than 0.002 gram. of hydrogen

sulphide in a litre. With regard to reactions with the hydrates of the alkaline earth, it is said that when a mixture of water, calcium hydrate, and carbon bisulphide is exposed to the action of solar light in summer, the liquid in six or eight hours acquires a fine yellowish-red color, and during the following night deposits a few very fine prisms of orange-red color. The same reaction takes place in two hours when carbon bisulphide is heated to about 50° with milk of lime. The liquid, filtered while hot, does not deposit any crystals on cooling, but, on adding calcium hydrate to the cooled filtrate, it yields the prismatic crystals above mentioned. These crystals consist of a compound of hydrate and sulpho-carbonate of calcium.

OBSERVATIONS ON TESTS FOR QUININE AND MORPHINE.

BY PROFESSOR FLÜCKIGER.

THE most characteristic test for ascertaining the presence of quinine is the formation of the splendid green compound called *Thalleiochine*, which is produced if solutions of the alkaloid or its salts are mixed with chlorine-water and then a drop of ammonia added.

It is known by Pelletier's researches that some other alkaloids are also altered by the above treatment, yet without assuming the same colorations. Morphia, for instance, shows a red hue, very quickly turning dark brown.

I was induced by a lamentable poisoning case to examine the behavior of the two alkaloids when mixed. The first question was to ascertain the smallest quantity of *quinine* which, in solution, displays the green color. If one part of quinine is dissolved into 4,000 parts of acidulated water and then about $\frac{1}{10}$ of the volume of the liquid of chlorine-water and a drop of ammonia added, a green zone will be readily formed if the liquids are cautiously placed in a flask without shaking. If the solution of quinine contain no more than $\frac{1}{10000}$, the green zone may still be obtained, but in more diluted solutions the success becomes more and more uncertain. From a practical point of view we may state that $\frac{1}{10000}$ of the alkaloid is the smallest quantity whose presence can thus be discovered with certainty. Kerner (1870) has succeeded with $\frac{1}{100000}$, but I was not able to corroborate this statement.

As to morphine, its solutions assume a yellow hue if chlorine is added, whereas chlorine does not at all alter the colorless solutions of quinine.

The dark-brown coloration of *morphine* in solution, to which chlorine-water and ammonia have been added, is no longer produced if less than $\frac{1}{1000}$ of morphine is present.

From these observations it may be foreseen what must happen if a mixture of salts of both those alkaloids be tested by chlorine and ammonia. The green color, thalleiochine (thalleiochine), will appear notwithstanding the morphine if the amount of the latter is less than $\frac{1}{1000}$ of the solution. But the test of quinine fails if there be more than $\frac{1}{1000}$ of morphine present, even when the quinine is in considerable quantity. The green color of the thalleiochine is enveloped by the dark dingy-brown color due to the salt of morphine.

In a specimen of quinine containing morphine, or *vice versa*, the presence of either of them can be shown as one pleases by means of chlorine and ammonia. In the comparatively concentrated solution the brown color of morphine will make its appearance, whereas thalleiochine results as soon as the quantity of the solvent much exceeds the proportion of 1,000 parts to one of morphine.

This is an illustration of the importance of not relying upon one test alone. In the fatal case alluded to, the presence of quinine happened to be ascertained, but morphine was overlooked. There was certainly no reason for presuming the presence of the latter, but one drop of nitric acid poured on the supposed hydrochlorate of quinine would have pointed out the presence of morphine, and spared the lives of two women.

I was curious to know the effect of bromine instead of chlorine in the above tests. The salts of morphine are apparently not altered by bromine and ammonia, but salts of quinine are more intensely colored by the latter process. The thalleiochine is then indeed produced in solutions which contain only $\frac{1}{2000}$ of quinine. Yet the behavior of bromine displays some striking differences. Chlorine alone, as already stated, causes no immediate alteration of somewhat diluted solutions of quinine, whereas they become turbid on addition of bromine as long as there is about $\frac{1}{2000}$ or more of quinine present. Now the precipitate which is produced by bromine in the solution of quinine does *not* turn green if a little ammonia is subsequently added, or, at least, the thalleiochine thus obtained is rather grayish. But in more dilute solutions of quinine, bromine acts more readily than chlorine. An excess of bromine is to be carefully avoided. This is easily performed if the vapor of bromine, not the liquid bromine itself, is allowed to fall down on the surface of the solutions of quinine; their superficial layer only must be saturated with bromine by gently moving the liquid. Then a drop of ammonia will produce the green or somewhat bluish zone, which is much more persistent than that due to chlorine.

Consequently, for demonstration of the test under notice, chlorine is to be used in comparatively concentrated solutions. In solutions containing so little quinine (less than $\frac{1}{1000}$) that it is no longer precipitated by vapor of bromine, the thalleiochine test succeeds much better with bromine, and goes much further, as shown above.

A well-known test for morphine is iodic acid, which is decomposed by the alkaloid, and forms a beautiful violet solution with bisulphide of carbon and chloroform. This test succeeds with solutions containing no more than $\frac{1}{1000}$ part of morphine.—*Neues Jahrbuch für Pharmacie*, April, 1872.—*London Pharm. Journal*.

COMPOSITION OF BEER.

MONS. A. METZ made an analysis of some beer manufactured at Weisenau, near Mayence, from a mixture of forty cwt. of malt to eight cwt. of rice. He found that it contained of

Alcohol.....	3.65 per cent.	} 7.36 per cent. extract.
Sugar.....	1.63 “	
Dextrine.....	5.13 “	
Proteids.....	0.37 “	
Inorganic matter, including phosphoric acid.,.....	0.22 “	
Difference.....	0.01 “	

Compared with an average resulting from the examination of thirty-one different kinds of Bavarian beer by Mons. C. Prandtl, it will be seen that the amount of alcohol is about the same; but the total amount of extract, and especially the quantity of sugar, exceeds that of any of the Bavarian kinds. Mons. C. Prandtl found in Bavarian beer—

	On the average.	Maximum.	Minimum.
Alcohol.....	3.55 per cent.	3.98 per cent.	3.23 per cent.
Total Extract.....	6.07 “	6.61 “	5.42 “
Sugar.....	1.08 “	1.38 “	0.82 “

This rice beer is exceedingly clear and light; it effervesces, and has a peculiarly mild taste.—*Food Journal*.

Test for Creosot, and Carbolic Acid.—I. N. R. Morson proposes (*L'Union Pharmaceutique*, June, 1872) to take advantage of the insolubility of creosote in glycerine, to detect the adulteration or substitution by carbolic acid—the presence of a very small amount of the latter, he states, renders the creosote soluble.

Constitution of Tannic Acid.—Since the experiments of Strecker, it has been thought that tannic acid is a union of gallic acid and sugar. Schiff (*Berichte der Deutsche Chem. Gesell.*, iv. 231), has furnished proof that this is not correct. He found that gallic acid was changed by treatment with PCl_5O_2 in warmth into tannic acid, also in the same way by arsenious acid.

The formula expressing the change is
 $6(\text{C}_{12}\text{H}_{10}\text{O}_6) [\text{gallic acid}] + 2(\text{PCl}_5\text{O}_2) = 3(\text{C}_{24}\text{H}_{16}\text{O}_{16}) [\text{tannic acid}] + 6\text{HCl} + \text{PO}_2$. That is, 1 equivalent of tannic acid and 2 equivalents of water equal 2 equivalents of gallic acid.

Thus $(\text{C}_{24}\text{H}_{16}\text{O}_{16}) + 2\text{HO} = 2(\text{C}_{12}\text{H}_{10}\text{O}_6)$.—*Ibid.*

BROMINE WATER AS A TEST FOR CARBOLIC ACID AND ITS ALLIES.

II. LANDOLT proposes bromine water as the most delicate test for very dilute solutions of carbolie acid. The reagent must be added in excess, and a yellowish-white flocculent precipitate of tribromophenol ($\text{C}_6\text{H}_3\text{Br}_3\text{O}$) falls. This is soluble in solutions of soda, potash, and ammonia, and will not then fall on the addition of muriatic acid. If the solution to be tested is very acid, it must be neutralized, and very strong precipitates are often not rendered absolutely clear by the alkalies mentioned. The precipitate may be filtered out, washed, then put in a test tube with sodium amalgam and water, and gently warmed and well shaken. If the whole be then placed in a shallow vessel and sulphuric acid added, the phenol is set free, collects in drops, and gives off a strong odor.

This reaction may be used to discover phenol in urine. The latter was treated with excess of bromine water, and after many hours a brown flocculent deposit formed on the bottom of the vessel. This was gathered on a filter, washed, and treated with sodium amalgam in the manner described, when the smell of phenol was manifested in a most certain manner.

Hlasiwetz and Barth have found that a watery solution of paraoxybenzoic acid throws down a precipitate with bromine water of tribromophenol, and the isomeric salicylic acid affords a precipitate of dibromosalicylic acid, which, when treated with sodium amalgam, gives an odor similar to that of phenol. Kresol, thymol, and guajacol, and other of the phenol series, give similar precipitates.

The bromine water gives, with many other substances, precipitates which may, however, be easily distinguished from those of the phenol group by means of the sodium amalgam.

With a watery solution of toluidin, bromine water yields a yellow, changing into red precipitate, soluble in muriatic acid, insoluble in

sulphuric acid and soda-lye. In a not too dilute solution of anilin, a flesh-red precipitate falls.

In not too dilute solutions of salts of quinia, quinoidine, cinchonina, strychnia, and narcotina, a yellow or orange-yellow precipitate, soluble in muriatic acid, insoluble in potash or ammonia.—*Vierteljahrschr. für Pharm.*, October, 1872.

PREPARATIONS OF PHOSPHORUS.

In a prize essay in *Transactions of the American Medical Association* for 1872, Dr. Saml. R. Percy proposes the following preparations of phosphorus:—

Take a good sample of olive oil, almond oil, or lard oil, heat it slowly in a Florence flask or porcelain capsule to 480° F. The heat should be gradually raised so that half an hour should be consumed before the oil is brought to this temperature. Let it stand till cool, then filter it into a clean, well-dried bottle. Into this bottle add transparent fragments of phosphorus, in the proportion of one grain of the phosphorus to every 100 minims of oil. Place the bottle in a bath of water at 180° F., and agitate until dissolved.

To prepare a *solid oil*, which may be used in pill or capsules: Heat a quantity of cocoa butter in a porcelain vessel to a temperature of 400° F., filter whilst hot, and cast into thin sheets which can easily be broken. Take of this a weighed quantity, melt over a water bath, and for every 100 grains add one grain of transparent phosphorus in small pieces; dissolve. When almost cold, add one or two drops of naphtha to deprive it of its luminosity. This may be either poured while warm into gelatine capsules, or it may be poured into shallow dishes. When cold, small pieces may be easily and dexterously re-worked in a porcelain mortar into a pill-mass, and quickly rolled out into pills, which may be coated with gelatine, collodion, or white shellac dissolved in strong alcohol; each grain equals $\frac{1}{100}$ gr. of phosphorus. Mutton suet may be substituted for the cocoa butter.

Dr. Percy states that there is in brain a comparatively large amount of an alkaloidal hypophosphite containing both glycerine and nitrogen, which forms a base to the lower oxide of phosphorus, and proposes to imitate this salt in the following preparations: No. 1 for pill use; No. 2 for use as a solution.

Take of purified cocoa butter or of beef tallow prepared in the same manner, 1,000 grains, put it into a Wolf's apparatus or a clean, wide-mouthed eight-ounce vial, to which a cork has been adjusted

with two glass tubes, one passing to the bottom of the bottle, and the other terminating near the cork; add 100 grains of Valentine's beef extract. Put on a water bath, and keep it for some time at 212° F., agitating frequently to mix the beef extract and fat well together. Add eleven grains of phosphorus in small pieces. When the phosphorus is all dissolved, attach an India-rubber tube, connected with a reservoir of oxygen gas under pressure, to the glass tube that leads to the bottom of the bottle. Allow the oxygen to pass slowly through the mass, still keeping it constantly agitated and at 212° F. Continue this until all luminosity has ceased, and until all the smell of phosphorus has gone. Take it out of the water bath, allow the oxygen to pass slowly through it, occasionally agitating until the fat begins to become solid, then cork tightly, and leave for a few days. Heat again in a water bath, and if any luminosity is visible, add pure oxygen. Take out the cork and glass tubes, and continue the heat till all the bubbles of oxygen are driven off. Pour into capsules or into cakes, to be made into pills.

No. 2. Take of lard oil, purified, 1,000 grains; Valentine's beef extract (which is more fluid than any other), 100 grains; keep in a water bath at 110° F., agitating to mix the beef extract and oil; add eleven grains of clear phosphorus in small pieces; when all dissolved, bring the temperature to 212° F., and strain; attach the bottle to the oxygen reservoir, and treat it exactly as described in the last formula.

Dr. Percy states that he has used these latter preparations as nerve tonics in a number of cases with very good effect.

A METHOD OF DETECTING THE FALSIFICATION OF ESSENTIAL OIL OF BITTER ALMONDS WITH NITRO-BENZINE.

BY EDMÉ BOURGOIN.

SOME time since I indicated a method of detecting the falsification of oil of bitter almonds with nitrobenzine. It consisted in agitating 2 or 3 grammes of the liquid with a fraction of its weight of solid caustic potash in a test tube. After some moments of shaking, the yellow color (permanent if the oil be pure) changes to a characteristic reddish tint. If the proportion of the nitrobenzine be large, this red color gives way to a green, which disappears in a day or two. These phenomena only are qualitative, and when the results are not marked, leave a doubt. The following plan is both qualitative and quantitative, and certain in its results.

In a flask containing some 100 grammes of emery, and provided with a large opening, there are put from 5 to 10 grammes of the essence, and from 20 to 40 cubic centimetres of concentrated bisulphite of soda; agitate briskly for a few minutes to favor the union of the salt with the oil of bitter almonds. Add rectified ether, which lays hold of the nitrobenzine. Remove the ether with a pipette and repeat the process; in this way all the nitrobenzine is taken up. Evaporate the united ethereal liquid over a sand-bath, and weigh the residue, which is nitrobenzine. To prove that the residue is nitrobenzine, put 4 or 5 drops in a tubular retort containing a pinch of iron-filings, and a little acetic acid at 8 degrees. Heat carefully, so as to obtain in the test tube about a gramme of distilled liquid, neutralize this with lime after the manner of M. Berthelot, and add 2 or 3 drops of the hypochlorite of lime; there will then develop a beautiful violet blue color, which is decisive as to the presence of aniline, *i.e.*, that of nitrobenzine in the primitive liquid.—*L'Union Pharmaceutique*, August, 1872.

MATERIA MEDICA FALLACIES.

BY DR. SQUIBB.

Among the articles that have been introduced in the dietary department, and have taken a firm stand in the materia medica, is *pepsin*. Generally, however, patients have been in the habit of taking starch rather than pepsin. Once get up a reputation concerning a certain variety of this agent, and the manufacturer has a good start for making money. Some specimens examined were good and others bad. The name of the maker is no guarantee, as it may be good at one time and poor at another. While the proprietor is looking after the money column, the manufacture is intrusted to another. The fresh supply of pigs' stomachs must come from the western pork-markets.

The pancreatic emulsions and preparations of bismuth and pepsin, so fashionable now, cannot be recommended: bismuth and pepsin cannot exist together. Those fashionable mixtures of beef and iron—as *Vinum cibi*, *Vinim cibi et ferri cum cinchona*, etc.—are gross frauds; only money is in them. Hardly any cod-liver oil will pass muster except it is tasteless; and his impression is that many of these preparations are not cod-liver oil at all, only oil made up for the market. Good oils should neither be too dark nor too light, but of a medium color. The dark varieties are made of livers in a state of decomposition. There are good cod-liver oils in market which come from Norway and Newfoundland. The reason that the Norwegian oil is less

rancid than others is, because it is never made at a less temperature than fifty degrees; consequently decomposition is avoided. Oil, when in use, should be kept in a cool place, as a refrigerator, and after each dose is given the glass should be thoroughly washed. Small pieces of ice put in the doses of disagreeable substances, like cod-liver oil, render the agent almost tasteless. Those physicians who eschew the fashionable remedies take to the syrups, such as Aiken's syrup, etc. The lacto-phosphate of iron is based on fallacies like the others; but it is very taking, and is advocated by Horsford and others. Physicians are anxious to get solutions of phosphorus into the stomach, but before it gets there it becomes oxidized.

Another popular fallacy of the day is the use of sugar-coated pills or medical confectionery. Coroners have found these pills, after death, in the stomach and intestines, undissolved. Medicines should be given in such a shape that they will be quickly dissolved. It is not an easy matter to get the hard coat off of the pills. Glycerine should be used in compounding pills, to render them soft. Pills made in this way are easily dissolved in the stomach. He has been astonished that Blancard's pill has been so useful as has been stated—it being covered with a metallic coat.

Medicines in capsules are not to be advocated—they being not easily dissolved.

The use of various forms of divided medicines, particularly "The Divided Medicine Co.'s" preparations, is another fallacy. It is nothing new, but an old way of preparing medicines. This way of dosing might be good if the physician would put the medicine up; but to purchase these preparations of companies is dangerous pharmacy.—*Medical Record*.

PREPARATION AND PROPERTIES OF SULPHOVINATE OF SODA.

IN a paper read before the Société de Pharmacie de Paris (*Jour. de Pharm. et de Chim.*) M. Limousin alludes to the peculiar purgative properties of sulphovinate of soda as already pointed out, in 1870, by Dr. Rabuteau. The high price of the salt as then prepared would prevent its general employment and, after several attempts, M. Limousin has succeeded in devising a more economical mode of preparation, a description of which is appended to this note. The sulphovinate has the cool taste peculiar to all the salts of soda; it is nearly free from bitterness, and has a sweet after-taste that makes it more easily tolerated than the sulphate, while, as a laxative, it is about three times more powerful than

that salt, and much more prompt. It is claimed that its administration is not followed by constipation, nor is there the danger of the formation of vesical calculi which sometimes attends the use of salts of magnesia. The salt may be administered in water; or sweetened water; or water charged with carbonic acid. In the latter form it is more agreeable than citrate of magnesia, and will keep unaltered for a long time. The process proposed by M. Limousin is as follows:—A kilogr. of pure sulphuric acid, sp. gr. 1.715, and a kilogr. of concentrated alcohol, about 96°, are introduced by means of two funnels (one for the alcohol and the other for the acid) into a third funnel arranged in a flask plunged into a freezing mixture or kept in a current of cold water, the flow of the two liquids into the flask being so regulated as to keep the alcohol in excess. The mixture is kept for four or five days at a temperature of 20° C. to 25° C., then diluted with five or six litres of distilled water, and saturated with about 1,500 grammes of pure carbonate of baryta diluted with a sufficiency of distilled water. When the point of saturation is attained, the liquid is left to deposit the sulphate of baryta, and afterwards filtered. The solution of sulphovinate of baryta so obtained is saturated by 850 to 900 grammes of pure carbonate of soda dissolved in four litres of distilled water. When no more precipitate is formed by the addition of the alkaline solution, and the liquid is neutral to test paper, the transformation of the sulphovinate of baryta into sulphovinate of soda is complete. The liquor, decanted and filtered, is evaporated in a water bath to about sp. gr. 1.33, and left to crystallize. The crystals, after draining, are dried in a stove. The salt so obtained is of great purity, and may be kept without alteration. With the quantities above indicated, about one kilogr. of the product is obtained. If the salt be free from sulphate of soda and sulphovinate of baryta, chloride of barium and sulphuric acid will not give a precipitate in a solution in distilled water.—*Canada Pharmacist.*

Borate of Manganese in Boiling Linseed Oil.—We understand that the use of borate of manganese is rapidly superseding the ordinary dryers, such as litharge, red lead, acetate of lead, sulphate of zinc, or oxide of manganese, which have been heretofore used in the boiling of oil. The advantages are the production of a lighter colored oil, the avoidance of a sediment, and the consequent reduction of loss during the process. The proportion of borate employed is three pounds and three-quarters to one hundred gallons of the oil. The salt should be rubbed up, or thoroughly mixed with a portion of the oil before putting into the pan. The whole is then well mixed and stirred during the application of heat, as in the old method.—*Ibid.*

PREPARATION OF SYRUPS WITHOUT HEAT.

L. ORYNSKI recommends very highly (Proc. American Pharm. Asso.) the following methods. He says syrups so prepared will keep very long and never crystallize :—

“Introduce thirty to thirty-two ounces of sugar (according to the temperature) into a percolator in which previously has been introduced a piece of lint or sponge well adjusted, and gradually pour on sixteen ounces of liquid so as to make the percolate (syrup) pass drop by drop. If the liquid is turbid, pour it back into the percolator till the syrup *passes clear*.”

The *syrupus scillæ comp.* is prepared as follows :—

“The roots are finely ground and macerated for twelve hours with as much diluted alcohol as they may absorb, then the tincture is obtained by percolation and evaporated to the consistence of a syrup. The extract thus obtained is mixed with a sufficient quantity of water, set aside till cool, and then filtered to separate all the albumen and other impurities. The liquid is now poured gradually into the percolator, in which the sugar has been previously introduced.” The result, as the sample testifies, is a syrup clear and pleasant to the eye. It will neither crystallize nor ferment.

The *syrupus scillæ simplex* is made from the squills not picked. It would be yet clearer if the squills are select white. The vinegar of squills for this syrup must be made several weeks previous, so that the albumen and other sediments which always are formed may be separated by filtering.

The *syrupus pruni virgin.* is made by macerating for an hour the bark with as much water as it may absorb, and then the percolation is followed in its usual way till the necessary quantity of liquid is obtained, which gradually must be added to the sugar introduced in a glass cover percolator.

The syrup of tolu, No. 2, is made by slightly digesting the balsam in a water bath ; the liquid is filtered, and the syrup is prepared as above mentioned. This syrup is very cheap, and may be used in place of other pleasant aromatic syrups.

All the medicinal syrups, I think, may be prepared “*via frigida*,” and, I am quite sure, would give satisfaction to everybody.

The advantages of this process are :

First. The syrups are clear, and there is no necessity of purifying them.

Secondly. They possess their medicinal properties unaltered, since many drugs may be injured by heat, more especially aromatics and those containing readily volatile substances ; and,

Thirdly. The syrups will neither crystallize nor ferment, and may be prepared in large quantity, provided the vessels or bottles are clean before filling them with syrup.

Testing Ethylic and Acetic Ethers for Alcohol.—By C. FREDERICKING.—In a graduated glass tube equal volumes of ether and anhydrous glycerine are thoroughly mixed; the alcohol obtained in the ether is taken up by the glycerine, and its volume increased, whereas that of the ether decreases by the amount of alcohol contained in it. Ether may therefore be deprived of water as well as alcohol previous to its rectification, in order to produce it pure, and the glycerine mixed with the water or alcohol may again be obtained pure by evaporation. In this manner essential oils may also be tested with glycerine for the amount of alcohol fraudulently added.—*Polyt. Centralblatt*, 1871, p. 728, abstracted in *Pharmacist*.

Opium Culture in Tennessee.—In a paper read at the late meeting of the American Pharmaceutical Association, Mr. Lillard stated that imported seed was planted in the spring of 1871, with good success, large and vigorous plants being the result, while the flowers and capsules were unusually large. The seed is sown about the same time as oats, in soil prepared as for cotton. It is planted in drills; the young plants are thinned out to from four to six inches apart, and cultivated similarly to cotton. Soon after the flowers drop off (this year it occurred in June), the capsules are cut horizontally, *on one side*, early in the morning. (The knife used resembles a cupping lancet.) The milky exudation coagulates rapidly, becoming first pale red, and then a rich brown soft mass. The next morning it is scraped off and dried in the sun, and the following morning the other side of the capsule is similarly scarified.—*Medical and Surgical Reporter*.

Chlorine Water.—According to Mylius the best method of administering chlorine water is with simple syrup and mucilage of gum arabic, the latter ingredient being for the purpose of restraining the evaporation of the chlorine water; all fruit or other complex syrups should be eschewed.—*Vierteljahrschr. für prakt. Pharm.* October, 1872.

Freezing Point of Bromine.—H. Baumhauer asserts that bromine consolidates not at -7.3 , as is commonly believed, but at -24.5°C . Also that it forms not bluish gray, but reddish brown crystalline masses. The old melting point was probably due to the bromine containing water.—*Ibid.*

5 vols. of oil are well agitated with 1 vol. of solution of potash of 1.24. The mass is	snow white. Bleached Olive oil. Almond oil. Rape-seed oil, when very fine.	yellowish. Olive oil. Oil of Sesame. Rape-seed oil. Poppy oil.	green. Lined oil. Oil of Hemp-seed. Oil containing Copper, or artificially colored.	rose-colored. Refined Rape oil.	brown and stiff. Hemp oil.	yellow brown and liquid. Lined oil.	red. Trials oil.
Equal vols. of the oil and of red fuming nitric acid are to be poured in a test-glass. At the point of contact there forms a middle zone, which is	small and a clear green, the oil itself is flocculent and opaque. Almond oil.	dark green; toward the upper surface rose-colored. Poppy-seed oil.	broad and a beautiful blue green. Olive oil.	brownish red. Liver oils.	green, and toward upper part red. Lined oil.	brownish red; toward the lower part greenish. Rape oil.	The whole mass of oil becomes in a little while red. Lined oil.
In a test-glass, the oil was poured on concentrated pure sulphuric acid. The point of contact is	beautiful green, with brown streaks. Rape oil.	yellow; on shaking, brownish olive-green. Poppy oil. Oil of Media.	red, soon turning into black streaks, showing themselves in smoky windings through the liquid. Train oil.	with shaking, beautiful, but dark green. Rape oil.	green. Lined oil. Hemp oil.	red. Train oil.	with 30 vols. of sulphuric acid of carbon, specks did violet, quickly passing into brown. Train oil.
With the Ewaldin proof the oil mass	firm, friable, and white. Almond oil. Bleached rape oil.	firm, friable and yellow. Rape oil.	firm and red. Oil of sesame.	warlike and white. Castor oil.	in the Ewaldin there appear oil drops and streaks. Mixed oil, in which are drying oils.	unaltered. Lined oil. Poppy oil. Nut oil.	After, and oil put into olive oil for correction of odor, swim upon the Ewaldin.
Boiled with litharge and water forms a plaster, whose consistency is	firm Olive oil.	amealy. Rape oil. Almond oil. Oil of sesame.	amealy, but drying in time. The drying oils.				
Solubility in alcohol, proportion	1 to 1. Castor oil.	1 to 25. Poppy oil.	1 to 30, Oil of hemp-seed.	1 to 40. Lined oil.	1 to 60. Almond oil.		
The specific gravity of the oil is	0.913. Almond oil, and oil of Brasses. Nap.	0.914. Almond oil, and oil of Brasses. Camp.	0.918. Olive oil.	0.923. Oil of new amc.	0.926. Oil of sunflower.	0.930, 0.970. Castor oil.	0.930. Lined oil.
Temperature according to Celsius, at which the oil passes from solid to liquid	-37°. Oil of Hemp-seed.	-16° to -30° Lined oil. -18 Castor oil.	-16° to -30° Oil of sunflower. -30° to -35° Almond oil.	-6° Oil of Brasses. Nap.	-4° Oil of Brasses. Camp.	-5° Oil of sesame.	-35°. Olive oil. -6° to -8° Lard oil.

The Ewaldin proof is made as follows: 4 parts of the oil, and 2 parts of NO_2 of Sp. gr. 1.20 are poured into a test-glass, and a half part of copper filings are added. Hydrochloric acid is generated even in the cold, and changes the oil into Ewaldin acid - *Verleasigkeit des Amwalds*. - *Verleasigkeit des Amwalds*. June 30.

SUPPOSITORIES.

SPERMACETI is a very cheap substance; it is always commercially pure—that is, not absolutely pure, but pure enough for pharmaceutical purposes. As this substance, by reason of its inherent whiteness and natural purity, does not require to be subjected to any bleaching process, or other injurious influences, consequently its originally bland and indifferent character particularly adapt it as the proper solidifying component of unctuous mixtures.

Pure lard is very cheap, and can always be procured without much difficulty. But the proper manner for the pharmacist to obtain it is to purchase the leaf lard, and render it himself. In this condition it is then superior to most fatty matters, pure almond or olive oil not excepted. To enhance its permanence it should always be benzoinated, and thus prepared can be employed for most pharmaceutical purposes, with but few exceptions.

All so-called cerates, ointments, and suppositories should have as a basis a plain mixture of spermaceti and lard, to the exclusion of white wax and olive oil.

The writer finds that a mixture of equal parts of spermaceti and pure lard forms an excellent excipient for suppositories, equal in all respects to the doubtful oil of theobroma, and therefore recommends this composition as the best procurable substance for the purpose.

But the writer's object, on this occasion, was to make special allusion to the preparation of the popular class of suppositories containing solid extracts. No doubt the greatest difficulty in connection with the suppository question is the proper incorporation of solid extracts. The method at present in use has been described above. But with this procedure the mixture often becomes too thick to pour conveniently, and if heat be applied to liquefy it, the extract most usually agglutinates and sinks to the bottom of the vessel in compact and unmanageable masses, the operation thus resulting in a complete failure. However, the writer finds that if some inert powder, as starch or French chalk for instance, in proportion of several times the weight of the extract be also added, then no difficulty whatever will be experienced in the manipulation. The mixture can often thus be fully liquefied without danger of precipitating the extract, which is held in perfect suspension by the powder. The powder can also be any pulverized crude material from which the extract is derived, but it is best of such a nature as not to become doughy when moist. The least possible moisture should be admitted, and to attain this the writer combines the extract by a peculiar manipulation. The spermaceti is first fused, the lard is then added, and, after melting, a portiou

of the mixture is poured upon the extract in its ordinary state, without any addition whatever. The extract and solidifying mass can then be very easily and uniformly mixed with the pestle; the inert powder, which is preferably starch, is then also mixed in; the smooth mass is now added to the remainder of the fused menstruum, thoroughly mixed, and poured with constant stirring into the moulds which were previously cleaned and well refrigerated with a mixture of ice and water. The suppository will have solidified in a few moments, and can be easily extracted from the mould by lightly tapping the edge of its base upon a solid support.—*Pharmacist*, October, 1872.

CARBOLIC ACID AND CREASOTE.

BY PROFESSOR FLUCKIGER, BERN.

A good plan for distinguishing these two substances is as follows :

	PARTS.
Take <i>a</i> . Solution of perchloride of iron about 1.34 spec. gr. . .	1
<i>b</i> . Creasote, that is to say, the liquid to be tested for creasote.	9
<i>c</i> . Alcohol containing about 85 per cent. of absolute alcohol	5
<i>d</i> . Water	60

Now *a*+*b* mixed assume no peculiar color.

a+*b*+*c* furnish a green solution.

a+*b*+*c*+*d* form a turbid mixture of a dingy brownish color, drops of creasote being separated.

On the other hand, in the case of carbolie acid, suppose likewise—

1. The above ferric solution weighing equally.	1
2. Carbolie acid (phenol).	9
3. Spirit of wine, as above.	5
4. Water.	60

Now 1+2 will show a yellowish hue.

1+2+3 yield a clear brown liquid.

1+2+3+4 display a beautiful permanently blue solution, without separation of carbolie acid, or the few drops sinking down may be redissolved by shaking.

Mr. Th. Morson has pointed out that glycerine is also a good test for the purpose under notice, creasote being not or almost not soluble in that liquid, whereas, as it is well known, carbolie acid readily mixes in all proportions with glycerine. This, however, requires a slight modifica-

tion. True creasote, which stands the above test, is perfectly miscible in any proportion with anhydrous or nearly anhydrous glycerine, but it is not so with a somewhat diluted glycerine; a clear solution of creasote and of the same weight of anhydrous glycerine becomes turbid on addition of a little water, whereas a similar solution of carbolic acid may be diluted with water without separation of carbolic acid.

The blue coloration of carbolic acid, due to perchloride of iron, enables us to discover it when mixed with creasote, but not to prove the presence of creasote in carbolic acid. The latter question, however, seems to me of less practical importance; yet creasote, if present to some extent, would quickly separate in the above process, $a+b+c+d$, if more water be added. For this purpose the addition of perchloride of iron would be useless.—*Pharm. Jour.*, London.

TABLE SHOWING THE SOLUBILITY OF SOME CHEMICALS IN GLYCERINE.

KLEVER.—100 parts glycerine dissolve the annexed quantities of the following chemicals:—

Acid. arseniosum.....	20	Morph. acet.....	20
“ arsenicum	20	“ muriat.....	20
“ benzoicum	10	Phosphorus.....	0.20
“ boracicum.....	10	Plumb. acet.	25
“ oxalicum.....	15	Potas. arsen.....	50
“ tannicum.....	50	“ chlorat.....	3.50
Alumen.....	40	Potassii bromid.....	25
Ammon. carb.....	20	“ cyanid.....	82
“ muriat.....	20	“ iodid.....	40
Antimonii et potas. tart.....	5.50	Quinia.....	0.59
Atropia.....	8	Quiniæ tanat.....	0.25
Atropia sulph.....	33	Sodæ arseniat.....	50
Barii chlorid.....	10	Sodæ bi-carb.....	8
Brucia.....	2.25	“ borat.....	60
Calcii sulphid.....	5	“ carbonat.....	98
Cinchonia.....	0.50	“ chlorat.....	20
Cinch. sulph.....	6.70	Sulphur.....	0.1¢
Cupri acetat.....	10	Strychnia.....	0.25
“ sulph.....	80	Strychn. nitrat.....	4
Ferri et potas. tart.....	8	“ sulphat.....	22.50
“ lactat.....	16	Urea.....	50
“ sulph.....	25	Veratria.....	1
Hydrarg. chlor. corros.....	7.50	Zinci chlorid.....	50
“ cyanid.....	27	“ iodid.....	40
Iodinium.....	1.90	“ sulphat.....	35
Morphia.....	0.45		

TABLE SHOWING AMOUNT OF MOISTURE IN AIR-DRIED DRUGS.

BY GEO. W. KENNEDY.

1.—ROOTS, RHIZOMES, ETC.							
	Loss.	Yield.	Gain by reabsorption.		Loss.	Yield.	Gain by reabsorption.
Lappa.....	16.25	88.75	10.40	Lobelia.....	11.60	88.40	5.64
Calumba.....	16.	84.	11.50	Leonurus.....	10.80	89.20	5.24
Taraxacum.....	15.25	84.75	9.75	Glechoma.....	10.88	89.67	6.33
Asclep. tuber.....	15.25	84.75	10.75	5.—LEAVES.			
Cypripedium.....	14.	86.	5.	Uvularia perfol. ...	18.	82.	8
Gentiana.....	13.	87.	9.	Conium.....	16.	84.	6
Panax.....	12.75	87.25	4.75	Catania.....	14.50	85.50	11.50
Krameria.....	12.67	87.33	9.17	Aconitum.....	14.	86.	9.25
Polygonatum.....	12.60	87.40	6.80	Belladonna.....	18.75	85.25	5.75
Scilla.....	12.50	87.50	8.50	Hyoscyamus.....	12.25	87.75	5.85
Althea.....	12.50	87.50	8.50	Senna Alexand.....	12.20	87.80	7.20
Gossypium.....	12.40	87.60	6.40	Melissa.....	11.75	88.25	7.80
Helleborus Niger..	12.	88.	8.25	Matico.....	11.	89.	6
Colchicum.....	11.50	88.50	8.	Tussilago.....	10.50	89.50	4.67
Inula.....	11.40	88.60	6.40	Salvia.....	10.50	89.50	8
Rheum.....	11.33	88.67	8.33	Stramonium.....	10.33	89.67	7.83
Spigelia.....	11.25	88.75	7.25	Rosmarinus.....	10.25	89.75	6.65
Podophyllum.....	10.83	89.67	6.73	Uva ursi.....	10.	90.	4.
Serpentaria.....	10.83	89.67	5.83	Buchu.....	9.20	90.80	4.40
Senega.....	10.80	89.70	5.67	6.—FLOWERS.			
Asarum canad.....	10.25	89.75	3.85	Lavandula.....	14.25	85.75	7.75
Valeriana.....	10.20	89.80	6.	Arnica.....	13.80	86.20	8.80
Sarsaparilla.....	9.	91.	4.50	Anthemis.....	9.80	90.20	6.80
2.—STEMS AND WOOD.				7.—SEEDS.			
Dulcamara.....	12.	88.	6.33	Stramonium.....	10.	90.	7.
Quassia.....	10.	90.	8.	8.—POWDERED DRUGS.			
3.—BARKS.				Rheum.....	8.25	91.75	5.25
Rhus glabrum.....	14.67	85.33	8.67	Inula.....	8.33	91.67	5.30
Xanthoxylum.....	14.50	85.50	8.50	Calumba.....	8.50	91.50	7.
Cinamomum.....	10.50	89.50	6.50	Colchici rad.....	9.	91.	6.
Prunus Virg.....	10.	90.	5.25	Sanguinaria.....	9.	91.	7.
Cinch. calis.....	9.	91.	2.80	Cimicifuga.....	9.80	90.20	4.80
4.—HERBS.							
Absinthium.....	14.	86.	8.50				
Hedeoma.....	12.25	87.75	8.25				

CHLORALUM.

PROF. FLECK has lately concluded an examination, on behalf of the Saxon Government, of chloralum solution, chloralum powder, and chloralum wool and wadding.

The liquid contained—

	PER CENT.
Water	82.32
Chloride of lead	0.15
Chloride of copper	0.10
Chloride of aluminium	13.90
Chloride of iron	0.42
Chloride of lime and gypsum	3.11
	<hr/>
	100.00

The powder, in addition to the above salt, contained 0.72 per cent. of chloride of arsenic and 32.15 per cent. of clay and sand. The result of the analysis left no doubt of the true value of the preparations and of the mode of manufacture.

To ascertain the comparative value of chloralum and other disinfectants, a series of parallel experiments were undertaken, and the value of those substances for disinfecting and clarifying is expressed by the following figures :

Chlorinated lime	100.0
Caustic lime	84.6
Alum	80.4
Sulphate of iron	76.7
<i>Chloralum</i>	74.0
Chloride of magnesium	57.0

In conclusion, it is observed that as the chloralum preparations contain also the chlorides of lead, copper, and arsenic, their use is not unattended with danger, especially if used internally, or for open and festering wounds.

The results show that chloralum and its preparations belong to the class of *secret remedies*.—*Pharmacist*, August.

Paraffin.—Not long ago the whole stock of paraffin wax in the world did not exceed four ounces, which was carefully preserved in the laboratory of Professor Liebig as a chemical curiosity. There is now produced in Scotland alone a quantity of not less than 5,800 tons annually.—*Chemist and Druggist*.

NEW ACID FROM TANSY.

FROSINI MERLETTA has obtained from the common tansy a peculiar crystalline acid insoluble in water, soluble in alcohol and ether, and possessing vermifuge properties similar to those of santonin.—*Vierteljahresschrift für Pharm.*, April 1, 1873.

THE OPIUM ALKALOIDS.

A LONG and elaborate paper on these bodies, by O. Hesse, is concluded in the October number of the *Vierteljahresschrift für prakt. Pharmacie*. The author finally states that there are in opium at least 15 alkaloids, which may be divided into the following groups:—

I. MORPHIA GROUP. (a) *Morphia group* in the narrowest sense: Morphia, Codeia, Pseudomorphia. (b) *Laudania group*: Laudania, Codamia, Laudanosia.

II. THEBAIA GROUP. Thebaia, Cryptopia, Protopia.

III. PAPAVERINA GROUP. (a) *Papaverina group* in the narrowest sense: Papaverin. (b) *Narceina group*: Narceina, Lanthopia.

IV. NARCOTINA GROUP. Narcotina, Hydrocartina.

The position of meconidia is uncertain.

The solution in concentrated pure sulphuric acid yields for the several groups the following colors:—

Group I. (a) Dirty dark green; (b) dirty reddish violet.

Group II. Dirty green to brownish green.

Group III. (a) Dark violet; (b) blackish brown to dark brown.

Group IV. Dirty reddish violet.

THE PREPARATION OF KOUMIS OUT OF CONDENSED MILK.

KARL SCHWALBE recommends the following process:—

To 100 cubic centimetres dissolved in a little water, add 1.0 grm. of lactic acid, 0.5 grm. of citric acid previously dissolved in water, and 15.0 grm. of rum; then dilute with sufficient water to make the whole quantity measure from 1,000–2,500 cubic centim. Place this mixture in a Liebig flask and saturate with carbonic acid. Put this flask in a warm room and allow to stand from 2 to 4 days. If at that time there

is a good foam upon it and fine coagula through it, it is ready for use. It may be kept good for 8 days.

The advantages of this koumis are—1. That by the use of rum, arrack, cognac, kirschwasser, &c., the flavor can be varied to suit the taste.

2. The casein is in very fine flakes, and therefore in a very digestible state.

3. The ready preparation of it as wanted.

4. The taste is more agreeable than that of the other sorts.

5. Its cheapness.

—*Zeitschrift des Oester. Apotheker Vereines.* Oct. 20, 1872.

ON THE COLORING OF GUAIAIC RESIN BLUE.

IN the *Vierteljahrsschrift für praktische Pharmacie*, Heft 1, 1873, is an elaborate paper by Ed. Schär on the above subject. From it we abstract and translate the following points:—

Hadelich, in his very careful investigation, found that guaiac resin is composed of guaiacresinic acid (guajakharzsäure), guaiaconic acid, guaiacin (guajakbetuharz), guaiacic acid (guajaksäure), and guaiac-yellow (guajakgelb). He also found that the sole principle which develops the blue color when oxidized, is the guaiaconic acid. Ed. Schär has repeated and extended this investigation of Hadelich and confirms the fact that the guaiaconic acid is the coloring principle. It constitutes about 70 per cent. of the resin, is soluble in alcohol and chloroform, also less freely in ether. When pure it is not soluble in benzole or sulphuret of carbon, but as it exists in the resin, probably owing to the influence of the soluble substances united with it, it is slightly so. When the salt of guaiacresinic acid crystallizes out of the watery solution in potash, the guaiaconic acid salt remains behind, and consequently the solution affords a delicate test for oxidizing substances. Guaiaconic acid salts are decomposed by carbonic acid, whilst those of guaiacresinic acid are only affected by the stronger acids. The guaiaconic acid is best prepared by passing carbonic acid through solution of its potash salts, washing the precipitate with water, and treatment of it with ether. Prepared in this way, guaiaconic acid ($C_{11}H_{12}O_5$) is an amorphous brownish-yellow substance, extraordinarily susceptible to the influence of light, especially to the rays at the violet end of the spectrum. It is also extremely sensitive to the ordinary oxidizing agents.

ON THE PREPARATION OF THE BROMIDES OF QUINIA, MORPHIA, STRYCHNIA AND CALCIUM.

BY GEORGE MACDONALD.

THE bromides of the alkaloids may be readily prepared in small quantities by precipitating a solution of their neutral sulphates with bromide of barium.

As bromide of barium is a salt not met with in commerce, the operator will have to make it for himself, by saturating a solution of hydrobromic acid with freshly precipitated carbonate of baryta. The following is a good method:—

Put 1 oz. by weight of bromine and 8 fluid ounces of water into a pint jar. Attach a sulphuretted hydrogen apparatus, being careful to so place the end of the delivery tube that it will touch the surface of the bromine, and pass a stream of sulphuretted hydrogen slowly through until the bromine is entirely converted into hydrobromic acid. Filter the hydrobromic acid solution into a capsule, and warm gently until it has lost all sulphurous odor.

To make the carbonate of baryta, to a boiling solution of 2 oz. of chloride of barium in a pint of water, add solution of carbonate of ammonia (to which a little ammonia has been added) in excess, wash the precipitate three or four times by decantation, and afterwards transfer it to a filter, and continue the washing until the filtrate ceases to produce any turbidity on the addition of a solution of nitrate of silver, to which a few drops of nitric acid have been added. Then remove the precipitate from the filter, and mix it with sufficient water to bring it to the consistence of thick milk.

To make the bromide of barium, add to the hydrobromic acid solution small portions at a time of the mixture of carbonate of baryta and water, until rather more than three-fourths of the mixture has been added. When this quantity has been added, apply a gentle heat and shake vigorously. Then filter a small portion and test with litmus paper. If it shows an acid reaction, more carbonate of baryta must be added until the reaction is neutral. When a sufficient quantity of carbonate of baryta has been added, filter and evaporate to 4 fluid ounces. It is not necessary to proceed to crystallization, as the salt is very soluble, and therefore difficult to crystallize in small quantities, and a solution of it is really what is wanted after all.

BROMIDE OF QUINIA.

To make this salt, dissolve 1 oz. of medicinal sulphate of quinia in 32 fluid ounces of boiling water, and add solution of bromide of ba-

rium until a precipitate ceases to be produced. (A little less than 5 fluid drachms of the solution of bromide of barium, made by the formula given above, will be about the proper quantity.) Filter a small quantity of the solution, acidulate it slightly with nitric acid, and test for baryta with a few drops of diluted sulphuric acid. If a whitish turbidity is produced, it is an indication that too much bromide of barium has been added, and enough sulphate of quinia must be added to entirely decompose it. If, on the other hand, the presence of baryta in the solution was not indicated, slightly acidulate another portion of the filtrate with nitric acid, and add a drop or two of solution of bromide of barium. If this produces a whitish turbidity, it shows that there has not been enough bromide of barium added, and more must be *very carefully* added, until the sulphate of quinia is all or *nearly* all decomposed. It is better, of course, to have a little undecomposed sulphate of quinia in the solution than any bromide of barium.

When the precipitation of sulphate of baryta is completed, filter the solution, while still warm, into a capsule, and evaporate at a gentle temperature, until crystallization begins to set in. Then remove from the fire and set aside to crystallize. The bromide of quinia will be found to be aggregated in *globular clusters* of brilliant silky needles, and the singularly beautiful appearance of the crystallization is alone almost ample compensation to any one for the little trouble he may go to in making it.

Drain the crystals well, remove them from the capsule, and place between sheets of bibulous paper and set aside to dry. The crystals are soluble in about 40 parts of cold water, and appear to be anhydrous. At least I have had a small quantity exposed to the air for a couple of weeks, and they do not show the slightest appearance of efflorescence. I have not made accurate weighings, and therefore cannot speak positively.

BROMIDES OF MORPHIA AND STRYCHNIA.

These salts may be prepared after the same method as bromide of quinia, with slight modifications, which will readily suggest themselves to the mind of the operator. They both crystallize well, and are quite as soluble as the corresponding sulphate.

BROMIDE OF CALCIUM.

The process of Mr. James R. Mercein, in the March number of the *American Journal of Pharmacy*, is probably as good a one as could be devised. The majority of apothecaries, however, will find the following to be a more ready and convenient way of making it:—

Dissolve 4 oz. of bromide of ammonium in a pint of water. Put in a flask and bring to the boiling-point. Keep boiling, and add milk of lime (made from *pure* calcined lime) in small quantities, until ammoniacal vapors cease to be evolved. The operator can easily tell when this point has been reached, by the sense of smell. Filter the solution, evaporate to a syrup consistency, remove from the fire, and stir until cold. This salt is quite deliquescent, and requires to be kept in well-stoppered bottles. In preparing this salt, care must be taken as to the quality of lime used, as some limestone contains a large percentage of carbonate of magnesia, and the salt obtained by using a lime burnt from limestone of that quality, would necessarily contain a correspondingly large percentage of bromide of magnesium.—*American Journal of Pharmacy*.

[NOTE.—In decomposing bromide of ammonium by caustic lime, care must be taken to avoid an excess of the latter, since a basic bromide (oxybromide) of calcium is very readily formed, having a strong alkaline reaction :

The term *bromide of quinia* has of late been frequently used in medical journals but is incorrect. The salt being a combination of *hydrobromic acid* with the alkaloid *quinia*, should be called hydrobromate of quinia. Its composition is analogous to that of hydrochlorate (muriate) of morphia, and its proper name is formed correctly only in perfect analogy with that of the latter.—Ed. *American Journal of Pharmacy*.]

ECONOMY IN DISINFECTANTS.

BY E. C. C. STANFORD, F. C. S.

SOME of the popular disinfectants have such an offensive odor of their own that an odorless substance will generally secure the preference for ordinary household purposes. We have several harmless, cheap, and odorless disinfectants amongst the alkaline and other chlorides. I have recently experimented on several of these to ascertain which is the most powerful, and, at the same time, the cheapest. That highly popular substance known as Chloralum was used also for the sake of comparison. The experiments lasted thirty days, and the times noted were those when mildew and offensive odor first appeared. The chlorides were each mixed in the proportion of 2 per cent. and 5 per cent. with urine. In the second experiments a mixture of equal parts of blood and water with the clot removed was used, and the chlorides added in the same proportions.

Mixtures with Urine, 2 per cent. Salts.

	First appearance of mildew.	First appearance of offensive odor.
Chloralum.....	4 days.	6 days.
Chloride Iron.....	none.	none.
“ Calcium.....	15	none.
“ Sodium.....	4	8
“ Potassium.....	4	5
“ Ammonium.....	4	23

Mixtures with Urine, 5 per cent. Salts.

Chloralum.....	4 days.	6 days.
Chloride Iron.....	none.	none.
“ Calcium.....	25	none.
“ Sodium.....	5	6
“ Potassium.....	12	none.
“ Ammonium.....	none.	7

Mixtures with Blood and Water, 2 per cent. Salts.

Chloralum.....	11	none.
Chloride Iron.....	26	none.
“ Calcium.....	18	none.
“ Sodium.....	4	5
“ Potassium.....	5	6
“ Ammonium.....	none.	12

Mixtures with Blood and Water, 5 per cent. Salts.

Chloralum.....	11	none.
Chloride Iron.....	none.	none.
“ Calcium.....	18	none.
“ Sodium.....	4	5
“ Potassium.....	4	5
“ Ammonium.....	none.	13

It will be seen that the most powerful of all is the chloride of iron, the simplest and least powerful is the chloride of sodium. The cheapest, in proportion to its power, is the chloride of calcium. This substance is a waste product in all alkali works, and the quantity at present thrown away is enormous; I now propose it for general household use as a convenient, colorless, harmless, and cheap disinfectant. I propose to use it in the form of solution containing 25 per cent. of the solid salt, and acidified with 12 per cent. of hydrochloric acid. This increases its power and is a harmless addition. I found about the same proportion in liquid chloralum. Compared with

liquid chloralum in deodorizing sewage it was found to be about four times the strength, and it can certainly be produced for half the price.

The sample of powdered chloralum used in the urine and blood experiments was found to contain about 3 per cent. of chloride of iron, which accounts for part of its deodorizing property. I was first led to notice the disinfecting power of chloride of calcium by using it in urinals. There is always great difficulty in keeping urinals in houses free from offensive odor; this is entirely obviated by putting a lump of chloride of calcium in the urinal; it lasts a long time, as it dissolves very gradually, and keeps the urinal perfectly free from odor.

For general household purposes, however, the liquid form is more convenient, and I propose to give the combination I have described the name of chloricalcium, which is shortly and sufficiently descriptive of its composition.—*British Pharm. Confer.*, 1872.

TINCTURE OF CALABAR BEAN.

BY R. ROTHER.

ESERINE, the alkaloid, is the active principle of calabar bean. Alcohol, strong or dilute, extracts the virtue of the bean, but water alone effects this less completely. When treated with strong alcohol the substance must be in a very fine powder, and requires a preliminary digestion with the menstruum before proceeding with the percolation; otherwise the exhaustion will not be perfectly attained. The original solid material is impervious to strong alcohol, and since the solvent effect of this depends upon surface action mainly, hence a coarse powder is wholly inapplicable for the purpose of extraction with this liquid. The pulverization of calabar bean is rather difficult in a small way, on account of its hardness and peculiar structure, and, moreover, great care must be exercised in the operation to avoid dusting, by reason of the poisonous character of the drug; consequently, a process which admits the application of a coarse powder together with a weaker alcohol would be much more desirable than the method in present use.

The employment of acetic acid as a part of the menstruum, results in the conversion of the alkaloid into soluble acetate; but a weak alcohol directly applied to a coarse powder does not appear to act favorably; the solution legumin and the unchanged starch interfere with the process.

Water swells the material, dissolving the legumin, and if the mixture is allowed to stand in a warm place for a few days it will become putrid. If however a small quantity of acetic acid be first added the legumin will not dissolve, but shortly the vinous fermentation will begin, resulting in the copious evolutions of carbonic acid, the disappearance of the starch and total disintegration of the original structure. By this change the alkaloid is exposed and easily and completely extracted by the acetic acid. After a few days, and rather before the end of the vinous fermentation, an equal volume of strong alcohol is added to the mixture and the maceration continued several days. It now becomes necessary to separate the liquid from the insoluble residue and complete the exhaustion. The process is therefore finished by percolation. For this purpose it becomes necessary, which is indeed a decided advantage in all percolations, to produce a solid substratum of coarse powder. Such is effected in this case by pouring part of the mixture upon a muslin strainer, separating the liquid by pressure, and forming a solid layer several inches high in the bottom of the percolator with the residual remnant on the strainer. Upon this foundation the remaining mixture is poured, together with the strained liquid, and then followed by a mixture composed of equal measures of strong alcohol and water until the required volume of percolate has passed. The preparation has a deep amber tint.

The tincture should conform in the proportion of the solid material with most other tinctures, and therefore contain 2 troy ounces of the bean to the pint of finished product.

The process is as follows :—

Take of Calabar bean, No. 50 powder...	16 troy ounces.
Acetic acid.....	half a fluid ounce.
Strong alcohol.....	} of each sufficient.
Water.....	

Mix the acid with three pints of water; pour this upon the powder and set the mixture aside for a few days in a warm place. Then add to it three pints of strong alcohol and macerate it a few days longer. After this pour part of the mixture upon a muslin strainer; press the liquid out, and pack the residue of the strainer firmly into a cylindrical glass percolator having a broad base; pour on to this foundation the rest of the mixture together with the strained liquid, and then a mixture of equal parts of strong alcohol and water, until eight pints of percolate has passed.—*Chicago Pharmacist.*

ADMINISTRATION OF PHOSPHORUS.

PHOSPHORATED oil (*huile phosphorée*) is a preparation of the French Codex, of which the following is the formula:—

“Phosphorus..... 2
Oil of sweet almonds.....100

“Put the oil into a bottle which it will nearly fill, and introduce the phosphorus. Heat in a water-bath for 15 or 20 minutes, agitating briskly from time to time. Keep the bottle closed during the operation, except at the commencement, when a passage for the air inside should be made by means of a paper placed between the neck of the bottle and the stopper. Let the solution cool and deposit, and then decant the clear oil into small, well-stoppered phials exactly filled.”

There is also an “*oleum phosphoratum*” in the new German Pharmacopœia, similarly prepared, in which, however, the proportions are: “phosphorus, well dried, 1; oil of almonds, 80.” The preparation should be “*limpidum, fumans, phosphorum redolens*.”

The subject of the solvent of phosphorus best suited for internal administration was studied by M. Dujardin-Beaumetz in 1868. He pointed out that phosphorus is soluble in sulphide of carbon, ether, chloroform, and oil. Of these the first, notwithstanding its great solvent power (according to Vogel dissolving eighteen times its own weight of phosphorus without losing its fluidity), is excluded, in consequence of its effects upon the system. Alcohol, also, he rejected, in consequence of the small proportion it dissolves (according to Buchner, 1 part in 320 cold alcohol, sp. gr. .799). Solutions in ether, chloroform, and oil were tried in the form of capsules, made to contain 1 milligram of phosphorus in each. The quantity of ether required was found to produce injurious effects, and was quickly abandoned. It may be remarked here that a case was mentioned at a meeting of the Société de Pharmacie, in April, 1870, where severe symptoms of poisoning followed the administration of 4 grains of phosphorated ether. It is also stated by Brugnatelli that the ethereal solution undergoes decomposition in the course of time. Chloroform, according to M. Beaumetz, dissolves easily two per cent. of phosphorus, and, therefore, 1 milligram doses could be administered in capsules containing 10 centigrams of the solution. Continued use of these capsules led, however, to considerable disturbance of the system, a result which, although at first referred to the phosphorus, he afterwards believed to be due to the chloroform. He considers the phosphorized oil to be the best preparation, and as many as twelve or thirteen capsules of this oil have been taken daily by patients without inconvenience. But an objection

exists in the deposit of insoluble phosphorus which gradually forms in them ; and M. Beaumetz has proposed to use phosphide of zinc, prepared by bringing phosphorus vapor into contact with melted zinc, in an atmosphere of dry hydrogen.

The deposit that occurs in the phosphorated oil of the French Codex was investigated by M. Méhu. In a paper read before the Société de Pharmacie, at Paris, in May, 1861, he states that it is the result of the action of the phosphorus upon the albumen, resin, and other organic matters present in ordinary oil of almonds. These deposits are yellow, becoming reddish by exposure to light, and vary in quantity with the temperature and the quality of the oil ; and since they carry down some of the phosphorus, the strength of the preparation is thus liable to variation. He proposes, therefore, to submit clear almond oil to a temperature of 150° C. in a porcelain capsule for about a quarter of an hour ; then for ten minutes to 200° C. or 250° C. By this means water is at first driven off, and then instable organic matters are destroyed or volatilized. The superheated oil deposits slightly after standing some time, or it may be filtered ; it will then produce an absolutely clear and stable solution of phosphorus.

According to M. Méhu, sweet almond, olive or poppy-seed oils will dissolve easily one-eightieth of their weight of phosphorus. He therefore proposes that only one part of phosphorus to 100 parts of oil, instead of the two parts of the Codex, should be used. Phosphorated oil of this strength is strongly luminous in the dark ; but this luminosity may be entirely destroyed by the addition of a small quantity of ether, or of any of the essential oils not containing oxygen, such as bergamot, citron, copaiba, lavender, mace, mustard, rosemary, turpentine, etc. Colza, rape, beechnut, linseed, and brown cod-liver oils each dissolve one-seventieth of their weight of phosphorus. Castor oil dissolves one part in one hundred and five. Cacao butter dissolves one per cent. ; but if a colorless product be required, it should be treated as recommended for the oil of sweet almonds.

Dr. Radcliffe has recommended the following formula for gelatinized phosphorus pills :—

“ Phosphorus..... 6 grains.
Suet.....600 ”

“ Melt the suet in a stoppered bottle capable of holding twice the quantity indicated ; put in the phosphorus, and when liquid agitate the mixture until it becomes solid ; roll into 3-grain pills, and cover with gelatine.”

The following formula by Soubeiran of a “ potion phosphorée ” is

given by Dorvault as the best method of administering phosphorus internally :—

“Phosphorated oil.....	8
Gum arabic.....	8
Peppermint water.....	100
Syrup	60

Make an emulsion.”—*Pharmaceutical Journal and Transactions*.

Cod-Liver Oil Emulsion.—A very agreeable emulsion of cod-liver oil is made as follows : Gum tragacanth, 8 parts ; cold water, 500 parts. To this mucilage cod-liver oil is added in any proportion, and thoroughly mixed by agitation. To every 30 parts of this, 4 parts of alcohol, aromatized with oil of bitter almonds, can be added.—*Jour. de Pharm.*

TO DISTINGUISH EUROPEAN AND ASIATIC RHUBARB.

DR. CAUVET states that this can be done by making a section of the rhubarb with a sharp knife, moistening it, and attentively examining it.

European Rhubarb.—The surface marked by alternate red and white lines radiating from the centre. These lines are, in cylindrical sticks, a little way from the periphery, but in flat pieces very near the periphery, intersected by a brown zone, which is sometimes interrupted.

Muscovite Rhubarb.—The surface offers on a whitish ground, yellow, sometimes scarcely perceptible, long and short anastomosing lines, often interrupted by radiating systems. These star-like masses are roundish, or long, and of various sizes ; their rays are, near to the middle point, clear yellow ; further out, brownish. The major lines have a general course to the periphery, marked by the anastomoses, irregularities, and star clusters.

Chinese Rhubarb.—The section presents clear yellow rays which, in much bent lines, pass from the centre to the circumference. These lines often appear to anastomose, and to form irregular stars, whose outer part is composed of more rays than their inner. This is especially seen in the cambium zone. As in the Russian rhubarb, between the radiating lines there are sometimes irregular stars. — *Vierteljahrschrift für prakt. Pharm.* Heft 1, 1873.

Iodal, a new Anæsthetic.—Guyot proposes iodal as a new anæsthetic. It was discovered by Armé, and is made by treating iodine

with a mixture of absolute alcohol and sulphuric acid. It is a colorless, oily liquid, smelling like chloral, and converted by alkalies into iodoform and formiates. The dose is from 1 to $2\frac{1}{2}$ grammes.—*Ibid.*

Analysis of the Gettysburg Katalysine Water.—By PROF. F. A. GENTH.—One gallon of 231 cubic inches contains—

Sulphate of Baryta.....	trace.
“ “ Strontia.....	0.004.27 grains.
“ “ Lime.....	0.831.45 “
“ “ Magnesia.....	6.779.40 “
“ “ Potash.....	0.208.86 “
“ “ Soda.....	2.467.76 “
Chloride of Sodium.....	0.657.90 “
“ “ Lithium.....	trace.
Bicarbonate of Soda.....	0.704.57 “
“ “ Lime.....	16.408.15 “
“ “ Magnesia.....	0.542.60 “
“ “ Iron.....	0.085.85 “
“ “ Manganese.....	0.006.69 “
“ “ Nickel.....	trace.
“ “ Cobalt.....	trace.
“ “ Copper.....	0.000.50 “
Borate of Magnesia.....	0.084.92 “
Phosphate of Lime.....	0.006.79 “
Fluoride of Calcium.....	0.009.54 “
Alumina.....	0.008.80 “
Silicic Acid.....	2.030.78 “
Organic Matter, with traces of nitric acid, &c.....	0.708.70 “
Impurities suspended in the water, like clay, &c.....	1.100.69 “
	<hr/> 32.542.72 “

Gun Cotton for Collodion.—CHARLES H. MITCHELL.—A number of experiments were tried, with the view of ascertaining the relative proportions of cotton and acid, together with the proper time for maceration necessary to produce a cotton which should combine the largest yield with the highest explosive power and solubility. The following formula was at length adopted :—

Raw cotton.....	2 parts
Carbonate potassa.....	1 “
Distilled water.....	100 “

Boil for several hours, adding water to keep up the measure ; then wash until free from any alkali, and dry. Then take of—

Purified cotton.....	7 oz. av.
Nitrous acid (nitric, saturated with nitrous acid), s. g. 1.42.....	4 pints.
Sulphuric acid, s. g. 1.84.....	4 “

Mix the acids in a stone jar capable of holding two gallons, and when cooled to about 80° Fahr., immerse the cotton in small portions

at a time; cover the jar and allow to stand 4 days in a moderately cool place (temp. 50° to 70° Fahr.). Then wash the cotton in small portions, in hot water, to remove the principal part of the acid; pack in a conical glass percolator, and pour on distilled water until the washings are not affected by sol. chloride barium; drain and dry. Yield, 11 oz. av.

This cotton is perfectly white, of a harsh, gritty fibre, very explosive, leaving scarcely any ash, soluble in ether, ether fortior, acetic acid, ether, glacial acetic acid, and in mixture of alcohol and ether, varying from 1 part ether to 3 parts alcohol to pure ether itself. If a cotton superior to this is desired, it may be obtained by treating this cotton with an additional proportion of the mixed acids, washing and drying as before. The cotton gains about one per ct. in weight, becomes perfectly soluble, and is so free from any ash as to scarcely scorch a sheet of white paper it may be burnt on. Both this and the previous gun cotton may be ignited on gunpowder without exploding it. The advantages claimed for this cotton over that of the U. S. P. are that it is perfectly soluble, very explosive, cheap; its manufacture is much more easy, requiring but little time and attention, and turning out a superior product with large yield and less cost.—*Amer. Journal of Pharmacy*.

Gallic Acid containing Iron.—Hager speaks of some white gallic acid which became decidedly tinted on solution in distilled water. It was found to contain a minute quantity of oxalate of iron; and as distilled water contains carbonate of ammonia, the color was brought about by the decomposition of the iron salt.—*Vierteljahrsschrift für prakt. Pharm.* Heft 1, 1873.

Preservation of Milk.—Dr. Schwabe asserts that the souring of milk is greatly hindered by the addition of 1 drop for every ounce of ethereal solution of oil of mustard.—*Ibid.*

To Cover Bitter Tastes.—Glycyrrhizin has the property of instantly causing the taste of quinine, aloes, colocynth, quassia, and other bitter substances to disappear. There does not appear to be any chemical change. An analogous action is seen in the influence of bitter almonds upon musk, and of oil of anise upon valerian. When musk is rubbed with distilled water of bitter almonds the odor of the musk soon disappears, but, when the mixture is allowed to stand, reappears as the oil of almonds volatilizes. The odor of bitter almonds masks but does not destroy that of the musk.—*L'Union Pharmaceutique*, December, 1872.

Explosion of Nitrate of Potash and Acetate of Soda.—M. Violette discovered accidentally that the above-named substances, in equal parts, form a mixture which, under the influence of heat, explodes with great violence, in a manner resembling gunpowder.

Phosphorescence of the Roots of the Florentine Iris.—Landerere states that on digging up the roots of some blooming Florentine iris at night, he was astonished at their phosphorescence. He tested the matter on three different nights, and found the roots always either emitting the phosphorescent light from their whole surface, or from points on it.—*Vierteljahr. prakt. Pharmacie.* Heft 1, 1873.

Tests for Ozonized Water.—Carius states that water containing ozone should answer the following tests :—

1. It should have the strong, peculiar odor of ozone.
2. Solution of iodide of potassium becomes brown, owing to its decomposition, when the ozone-water is added to it. Finally the iodine is converted into iodic acid by the ozone, and will not, as at first, react with starch.
3. If the ozonized water be put into a closed vessel with the solution of the sesquioxide of thallium, after a time the brown oxide of thallium will be deposited.
4. It bleaches indigo solutions, and turns those of guaiac resin blue.
5. On exposure to the air it loses its smell and active properties.—*Ibid.*

Adulteration of Tea.—According to Consul Medhurst, of Shanghai, the Chinese have recently taken to largely adulterating green tea with willow leaves prepared like the genuine article.—*Ibid.*

Benzoic Acid in Gas-Water.—H. Reinsch states that he has obtained crystallized benzoic acid from gas-water.—*Ibid.*

A CHEAP CITRATE OF MAGNESIA.

BY C. G. POLK, M.D.

R. Carb. magnesiae	3 xii.
Acidi citrici.....	℥ iii.
Olei limonis	gtt viii.
Potassae carb	3 iv.
Syrupi.....	℥ xii.
Aquæ, q. s. or.....	℥ xss.

Dissolve the citric acid in ten and one-half ounces of water. **Rub**

the carbonate of magnesia carefully with the oil of lemon, and reduce to a powder; slowly add two ounces of the solution of citric acid and triturate into a pasty citrate of magnesia. Slowly add the remainder of the acid and stir until the solution is completed; add the syrup and mix. To each bottle add four ounces of the solution, eight ounces of water, and thirty-five grains of bicarbonate of potassa, and tightly cork.

EMULSION OF COPAIBA.

BY C. G. POLK, M.D.

Copaiba Emulsion.

R. Copaibæ.....	℥ i.
Liq. potassæ.....	3 ii.
Spirit. ætheris nitrosi.....	3 xii.
Pulv. extract. glycerh.....	3 iv.
Pulv. acaciæ.....	3 iii.
Syrupi.....	℥ ii.
Ol. anisi.....	
Ol. gaultheriæ.....	āā gtt. xl
Tinct. cardamomi comp.....	℥ ss.
Aquæ q. s. ad ft.....	℥ viii.

First rub the acacia and liquorice thoroughly together, add oils of gaultheria and anise and incorporate them, then the liquor potassæ, then the copaiba, and rub together into a pasty emulsion; then add the syrup, tinct. of cardamom comp., sweet spirits of nitre, and water sufficient to make eight ounces, stirring carefully after the introduction of each.

PREPARATION OF THE PHOSPHATES OF IRON, STRYCHNIA AND QUINIA.

BY C. G. POLK, M.D.

UNDER the name of syrup of the phosphate of iron, quinia and strychnia, there are three distinct preparations made, the difference in their chemical combinations being sufficiently distinct to constitute them three distinct remedies,

Tribasic phosphates, metaphosphates and pyrophosphates.

Easton's formula is the one most used, and the one physicians mean when designating no other process in their prescriptions. It is the syrups of the tribasic phosphates. The protosulphate of iron is decomposed by tribasic phosphate of soda represented by $2 \text{ Na O}, \text{HO}, \text{PO}_3$, and dissolved in dilute phosphoric acid $(3 \text{ HO}) \text{ PO}_3$.

Polk's formula produces a syrup of the monobasic phosphates, with a large excess of acid, and which might justly be termed a syrup of the superphosphates of iron, quinia and strychnia. The phosphate of soda which is in excess is changed by heat gently applied from a common phosphate into a metaphosphate. Instead of using the bibasic dilute phosphoric acid $(3 \text{ HO}) \text{ PO}_3$, the glacial phosphoric acid, $(\text{HO}) \text{ PO}_3$ is used, dissolved in boiling water, and the freshly precipitated phosphate of iron is dissolved to saturation in the acid solution.

The syrup of the pyrophosphate contains the ferric salt in the form of $2 \text{ Fe}, \text{O}, 3 \text{ PO}_3 + 9 \text{ HO}$, containing a larger per cent. of acid than the tribasic phosphate and a smaller per cent. of iron. This syrup is the one most convenient for druggists, as it can be easily made by dissolving the iron salt in hot water, dissolving the quinia by the aid of a little phosphoric acid, dilute, adding the strychnia dissolved by a few drops of acetic acid, and the syrup, when the work is finished.

Aitkin thus publishes Easton's formula:—

R. Ferri sulph.....	℥ v.
Sodæ phosph.....	℥ j.
Quiniae sulph.....	grs. exci.
Acid. sulph. dil.....	℥ ss.
Aquæ ammoniac.....	℥ ss.
Strychnia.....	grs. vi.
Acid. phosph. dil.....	℥ ss.
Sacchar. alb.....	℥ ss.

Dissolve the sulphate of iron in an ounce of boiling water, and the phosphate of soda in two ounces of boiling water. Mix the solutions and wash the precipitated phosphate with the washings are tasteless. With sufficient dilute phosphoric acid dissolve the sulphate of quinia in two ounces of water. Add the quinia with ammonia water and carefully wash it with the phosphoric acid, and the quinia thus obtained is dissolved in the acid solution of phosphoric acid. Then mix the sugar and saccharum in the acid solution out heat.

Mr. Charles Bullock's formula for the syrup of Easton is precisely the same as Easton's, and is given in the same way, but deviates from Easton in most of the particulars of the process.

as follows : Dissolve the phosphate of soda and the sulphate of iron each in four ounces of warm water. Mix the solutions and collect the precipitate on a paper, filter, and wash with warm water ; remove the filter from the funnel and press carefully between folds of bibulous paper until no more water is absorbed by the dry paper. Having dissolved the sulphate of quinia in four ounces of water, add a weak solution of aqua ammoniæ, stirring constantly until a slight excess is added. Collect the precipitated quinia on a filter paper and proceed as with the iron salt. Both these precipitates will readily detach themselves from the wet filter without loss, if the pressing is carefully done. Dissolve the quinia and the strychnia in eight ounces of the dilute phosphoric acid and the iron salt in the remainder of the acid, mix the solutions, filter, and then add the sugar. It is preferable to dissolve the sugar first, and then filter.

I have attempted to follow Mr. Bullock's process with unfortunate results in every instance, perhaps on account of unskilful management on my part. But I have found in every specimen I have examined, traces of the sulphate of soda, sulphate of iron, and precipitated flakes of quinia and strychnia, whether the specimen were made by myself or others ; while Easton's formula has never failed me, and cannot be very easily improved for a syrup of the specified strength when the amount of phosphoric acid is not objectionable.

Sometimes, however, it is important to avoid the large amount of acid present in Easton's formula, and yet give the ingredients which compose the syrup.

To effect this, I devised, some five or six years ago, the following formula, which has proved satisfactory :—

R. Liq. ferri tersulphatis.....	3 xiii.
Sodæ phosphatis	3 xiv.
Acid. citrici.....	3 iss.
Potassæ bicarb.....	3 iss.
Quiniæ sulph.....	grs. lxiv.
Strychniæ citratis.....	grs. ii.
Sacch. alb	℥ x
Aquæ dest.....	q. s.

Dissolve the phosphate of soda in ℥ iv. of boiling water, and mix it with the solution of tersulphate of iron ; wash the precipitate until the washings are tasteless, place the magma in a small evaporating dish and add the citrate of potassa made by dissolving the citric acid in ℥ ss. of hot water and saturating with the potassa ; add water ℥ iv. and apply gentle heat over a sand-bath until it is all dissolved. Dissolve the quinia and strychnia in 2 oz. of water by aid of citric acid, apply

gentle heat until dissolved. Last, add sufficient water to measure sixteen ounces.

Syrup of the Superphosphate of Iron, Quinia and Strychnia, or Syrup of Metaphosphates Comp.

R. Ferri persulphatis.....	3 xxv.
Sodæ phosphatis	℥ vii.
Acidi phosphorici glacialis.....	℥ iv.
Quiniæ sulphatis.....	℥ xvj.
Acidi sulphurici diluti.....	q. s.
Aquæ ammoniæ	q. s.
Strychniæ citratis	grs. viii.
Bruciæ	grs. iij.
Sacchar. alb	℥ xxiv.
Aquæ destillatæ.....	q. s.

Dissolve the persulphate of iron in six ounces of boiling water and the phosphate of soda in eight ounces of boiling water, and mix the two in an opaque porcelain jar, of the capacity of a half-gallon, on a fine linen filter, and instantly seal with an air-tight cover. The phosphate of iron will be thrown down, of white color. Let stand about fifteen minutes, and pour off the supernatant liquid and rapidly pour on warm water so as to keep the magma all the time covered, to prevent oxidation from contact with the air, until the washings cease to be affected by a solution of the chloride of barium. Dissolve ℥ ii. glacial phosphoric acid in ℥ iv. of boiling water and keep the solution at the temperature of 200°, add the precipitated phosphate of iron, when the latter is dissolved let cool, when the superphosphate of iron will congeal into a mass of pillular consistency. Dissolve the remaining two ounces of phosphoric acid in twelve ounces of distilled water on a sand-bath, and add enough distilled water to make the solution measure two pints, into which dissolve the superphosphate of iron.

Dissolve the sulphate of quinia in six ounces of water by the aid of dilute sulphuric acid, and precipitate with a weak solution of aqua ammonia slowly added to produce a slight alkaline excess, and wash carefully until the quinia is free from any impurity. Then dissolve the quinia thus obtained, and also the citrate of strychnia, in the dilute phosphoric acid with the iron, add the sugar and dissolve without the aid of heat by constant agitation.

After standing a few days, there will be found a considerable precipitate of phosphate of iron, with some quinia and strychnia.

Remove this precipitate, mix it in twelve fluid ounces of hot water, and stir vigorously for a few minutes. The quinia and also the strychnia, which is very minute in quantity, will be dissolved. Pour off the liquid

and let cool. Upon cooling, the quinia and strychnia will be precipitated very nearly, but a few drops of aqua ammoniæ will scarcely leave a trace in solution. Carefully wash the quinia and strychnia thus obtained and return to the syrup. After this the syrup is nearly permanent and the precipitate unimportant.

Wash the phosphate of iron carefully with warm water, press between folds of bibulous paper, and bottle for other uses.

The syrup of the superphosphate of iron, quinia and strychnia contains about four grains of the superphosphate of iron, one grain of the phosphates of quinia and one thirty-second of a grain of the phosphates of the ignatia alkaloids, strychnia and brucia in combination. Dose: A teaspoonful.

Perhaps it would be better and more economical to dissolve the quinia and strychnia and brucia in $\frac{3}{4}$ vii. of the dilute monobasic phosphoric acid, and the superphosphate of iron to saturation in the remaining dilute phosphoric acid. But I have been so well pleased with the result obtained from the process of the formula given that I have let well enough alone.

A porcelain funnel with a stop-cock at the very beginning of the tube of the funnel would answer just as well as the porcelain jar with its stop-cock and spigot which I use; care being taken that the muslin rests upon the valve, so that none of the precipitate gets between the filter and the valve to be afterwards washed away by the subsequent stream of water. My preparation is a better chalybeate than Easton's, while Easton's is a better general tonic. My preparation of the bibasic phosphates only differs from Easton's in containing twice the amount of iron salt, and having the syrupy phosphoric acid used instead of the dilute acids. As it has been published elsewhere I need not reproduce it. The bibasic phosphate preparation is more easily tolerated by disordered digestive organs, and often serves an excellent purpose where the others cannot be taken.

Removal of Plaster of Paris Bandages.—This may be readily accomplished by wetting them with a strong solution of common salt. It causes the plaster to crumble, so that the bandage can be readily cut. It is also useful to clean the hands and nails of the operator.—*Boston Medical and Surgical Journal.*

Butyric Acid as a Preventive of Phosphorus Reactions.—It being desired to examine a fermented mass of sugar, milk, coffee, and bread, for phosphorus, all the reactions failed, even with the Mitscherlichen apparatus. Roussin, however, found that the free butyric acid masked the phosphorus; for when this was neutralized by

carbonate of potash, testing in the Mitscherlischen apparatus afforded very evident proof of the presence of phosphorus.—*Vierteljahrsschr. für Prakt. Pharm.*

NOTES ON PEPSIN, BISMUTH, AND ELIXIR OF PEPSIN AND BISMUTH.

BY E. SCHEFFER.

SEVERAL facts which I published in my essay (*Am. Jour. Phar.*, Feb., 1872), impressed on me the impossibility of a preparation such as elixir pepsin, bismuth (and strychnine.) I do not want to speak again about the presence of alcohol in a solution containing pepsin, as I have repeatedly given the results of my experiments, which prove beyond doubt that pepsin and alcohol, particularly when the latter amounts to a certain percentage, are incompatible.

The main objection I intended to bring against such an elixir, prepared with ammonio-citrate of bismuth in a neutral or alkaline solution, is the neutral or slightly alkaline state. My experiments prove clearly that pepsin, in neutral solution, does not keep, and that in alkaline solution it loses its digestive properties.

The physician might wish for a combination of pepsin and bismuth in the liquid state, but another question is, can such a combination be made, or can it exist? Those that manufactured the elixir of pepsin and bismuth (and strychnine), were satisfied to know that they used pepsin in its preparation, but whether it was in it or in an active form never troubled them, as they never tested for it. They could conscientiously put their label on the bottle, and maintain that they used pepsin in its preparation. The physician prescribed it in good faith, because he had confidence in the firm who made it, and in the name by which the preparation was designated.

Having tested several elixirs of pepsin and bismuth that I could get hold of, I found that even after the addition of hydrochloric acid not the least quantity of albumen was dissolved.

Thinking that an acidulated bismuth solution might, in combination with pepsin, prove more efficacious containing the pepsin in its active form, my first aim was to find a bismuth salt for that purpose.

Crystallized ternitrate of bismuth dissolves in glycerine, which solution can be diluted with a considerable quantity of water before the subnitrate is precipitated. This salt I dropped from the list, as the solution is too acid and tastes too styptic.

Freshly precipitated subnitrate of bismuth, prepared with 1 part crystallized ternitrate with 40 parts of water, was put on a filter, and when entirely drained added to glycerine, in which it dissolves, forming a clear solution, but on the addition of water the clear solution becomes milky after some time.

I now tried the action of acids on ammonio-citrate of bismuth. For that purpose I made two solutions of ammonio-citrate of bismuth of the same strength, with the difference that the one solution was made with water alone, and the other with a mixture of glycerine and water. To these solutions were now added different acids, and the following results obtained: Mineral acids gave in both solutions immediately a precipitate. By the addition of organic acids, such as acetic, lactic, and citric, both solutions kept clear, but after a lapse of several hours the pure water solutions became milky, and by longer standing deposited a white precipitate, while in the solutions containing glycerine an opalescence did not show itself before 24 hours.

Judging that a small quantity of organic acid, sufficient to dissolve the pepsin, would not give even an opalescence in a solution of ammonio-citrate of bismuth containing glycerine, I thought that a glycerole could be made containing pepsin as well as bismuth, etc.; but by mixing the pepsin solution with the solution of the bismuth salt, the pepsin was precipitated in the same characteristic form as it is precipitated from its solutions by chloride of sodium.

Having at first intended to make the glycerole contain in the pint 128 grains ammonio-citrate of bismuth, 256 grains of saccharated pepsin (respectively 1 and 2 grains to the fluid drachm), 1 fluid drachm of lactic acid, 8 fluid ounces glycerine, and 8 ounces of water, I thought that by making it only half as strong in bismuth and pepsin it might answer, but the pepsin was in this instance also precipitated. The ingredients were put together in four different ways, but in all with the same result.

This negative result proves clearly that the pepsin is precipitated from its solution by the bismuth salt, and as I have proven in my essay (Feb., 1872), that a watery solution of pepsin is precipitated by chloride of sodium in the same way as an acidulated one, we must infer that the bismuth salt acts the same, and that therefore the elixir of pepsin and bismuth, as it was made, *cannot contain any pepsin*.

Abstracting, therefore, from the alcohol, and not speaking of the neutral or alkaline solution, the elixir of pepsin and bismuth is an incongruity, and when patients have derived any benefit from it, it was from the bismuth it contains and the stimulating effect of the spirits, but surely not from the pepsin, *as it does not contain any pepsin*.

In the same number of the same journal Mr. Jas. S. King says on the same subject as the above:—

For a year or more past I have dispensed an elixir of pepsin, bismuth, and strychnia, made by first thoroughly triturating 256 grains Boudault's pepsin with water, then filtering from the starchy matter, and to the filtrate adding syrup, sherry wine, glycerine, and orange-flower water. Next a solution of strychnia is made in water by the aid of a little citric acid, and this added to the solution of pepsin. Then 64 grains of ammonio-citrate of bismuth are dissolved in water by the aid of gentle heat, and a few drops of aqua ammoniæ added to clear the solution, care being taken to use no more of the alkali than is absolutely necessary. This solution is added to that of the pepsin and strychnia, making, when finished, 16 fluid ounces.

This elixir is slightly acid from the sherry wine, and it is necessary that it should be acid, not only on account of the pepsin being quickly injured by alkalies, but that the strychnia may be held in perfect solution.

In one fluid ounce of this elixir, which has been made about thirty days, and which contained—

- 16 grains Boudault's pepsin,
- 4 grains ammonio-citrate of bismuth,
- 1-16 grain strychnia,

was digested some coagulated albumen at a temperature of 100° F. for six hours. There was dissolved six grains.

2d. One fluid ounce of the same elixir, to which was added six drops of hydrochloric acid, and digested with coagulated albumen for the same time, and at the same temperature, dissolved twenty and one-half grains.

3d. One and one-half fluid ounce of wine of pepsin, made of six drachms of sherry wine, and the remaining six of syrup, glycerine and distilled water, and containing sixteen grains Boudault's pepsin, treated as above, for six hours, dissolved thirty grains of coagulated albumen.

4th. Sixteen grains of Boudault's pepsin, triturated with one ounce distilled water, filtered from the starchy matter, coagulated albumen added to the filtrate, and digested at 100° F. for six hours, dissolved five and three-tenth grains.

In the second case the addition of hydrochloric acid increased the digestive action of the elixir, although it caused a precipitation of the bismuth salt; but this more nearly represents the result following the ingestion of the elixir, and the precipitation of the bismuth is not objectionable, as it is frequently given in powder.

Senna-Coffee.—It may not be generally known that the disagreeable taste of infusion of senna may be completely removed by the addition of coffee in its preparation.

For a full dose, take a teacupful (say one ounce) of senna leaves, heaped teaspoonful (say two drachms) of freshly-parched and ground coffee, and boiling water a sufficient quantity to make a teacupful (say four fluid ounces) of infusion—steep till of sufficient strength.

To the infusion thus prepared, add milk and sugar to taste. The drink will be quite acceptable to adults, and not disagreeable to children.—*Southern Med. Record.*

Boldina.—Bourgoin & Verne have discovered an alkaloid for which they propose the name of boldine, in the Chilian tree *Peumus boldus*. The method of obtaining it is given in *L'Union Pharmaceutique*, November, 1872. Its physiological properties have apparently not been investigated.

Extracts in Powder (*Boston Medical and Surgical Journal*).—It is sometimes very desirable to administer the solid extracts (say *extract of hyoscyamus*) in the form of a powder.

All such extracts may be reduced to fine powder by patiently rubbing them (say two or more hours) in a mortar with an equal quantity, by weight, of calcined magnesia.

Extract of gentian yields the slowest to this manipulation.

A Simple Method of Determining the Amount of Alcohol in Chloroform.—A. C. Oudemans, Jr., has discovered that the solubility of cinchonia in pure chloroform is so much less than in that containing some alcohol, as to make it possible to determine the quantity of the latter in any such mixture by testing the solvent power. He gives the following table:—

Per cent. of alcohol.	Per centage of Cinchona, by weight, at 17° C.	Difference.
0 per cent.	0.28	6
1 “	0.90	62
2 “	1.46	56
3 “	1.99	53
4 “	2.49	47
5 “	2.96	43
6 “	3.39	40
7 “	3.79	36
8 “	4.15	33
9 “	4.48	28
10 “	4.76	..
11 “	....	..

The cinchonia is best prepared by precipitating a weak alcoholic solution of a pure salt of the alkaloid by ammonia. In that way a loose mass of microscopic crystals are obtained which are readily dissolved.—*Zeitschrift Oester. Apothek-Vereines*, February 20, 1873.

Separation of Magnesia from Potash and Soda.—H. Scheerer publishes in the *Journal für praktische Chemie* (iii. 476) a new method of separating magnesia from potash and soda. It consists in evaporating a solution of the chlorides mixed with oxalate of ammonia to dryness in a platinum crucible. The residue is then dried, heated at first gently, and then to dull redness, treated with water, boiled and filtered. Magnesium carbonate will remain on the filter, while potassium and sodium carbonates will be found in the filtrate. This process is said to yield good results, but sulphates must not be present.—*London Pharm. Journ. and Trans.*

Vitrified Corrosive Sublimate.—M. Personné, pharmacien en chef de la Pitié, stated at the meeting of the French Academy of Medicine, Jan. 23, that he had prepared a vitrified corrosive sublimate, which, like vitrified arsenic, is more soluble than the crystalline form.—*Archives Générales de Médecine*, March, 1872.

New Species of Cinchona.—In the *Zeitschrift des Allgem. Oesterr. Apothek-Vereins* of March 10, J. Eliot Howard describes a new species of cinchona under the name of *C. rosulenta*.

To Detect Peanut-oil in Olive-oil.—The mode of detecting arachis-oil in olive-oil will also be interesting to those engaged in such investigations. The suspected oil is to be first saponified, and the fatty acids obtained in a free state by decomposing the soap with hydrochloric acid. By converting these acids into lead salts we are enabled to get rid of the oleate of lead, by its insolubility in ether. The soluble lead salts are once more decomposed with hydrochloric acid, and the resulting fatty acids are dissolved in the smallest possible quantity of alcohol at a temperature of 90 degrees. If arachidic acid be present, it will deposit in crystals from the solution on cooling; and if a quantitative analysis be desired, the acid can be further purified by alcohol and weighed. Any mixture over 5 per cent. may be thus easily and certainly detected. According to the experiments of Monsieur Renard, earth-nut oil contains 4.5 per cent. of arachidic acid.—*Food Journal*.

New Derivative from Strychnia.—Dr. C. Römer has found that by heating monochloro-acetic acid with strychnia for several hours a new crystalline base is formed.—*Zeitschrift für Chemie* von Beilstein, No. 14, 1871.

Tannic Acid formed from Gallic.—II. Schiff states that he has confirmed the observation of Dr. Löwe that arsenic acid converts at a boiling heat aqueous and alcoholic solutions of gallic acid into tannic acid.

Tests for Balsam of Peru.—According to E. Schwabe (*Archiv der Pharm.*), if 1 gramme of pure balsam of Peru is rubbed up in a mortar with 4 or 5 drops of pure concentrated sulphuric acid, it makes a tough, kneadable mass, which on cooling is so tenacious that it may be raised out of the mortar by the pestle. If, however, castor-oil or copaiba balsam is contained in the balsam, the mass will be of the consistency of a salve—smeary.

Pure balsam of Peru has a sp. gr. of 1.40—1.60, but if it be adulterated with a fatty oil this is altered. Taking advantage of this, the following test has been proposed:—1 part of common salt is dissolved in 5 parts of water, so as to give a specific gravity of 1.25. If a drop of the balsam readily sinks in this it has not been adulterated by any of the ordinary adulterants. Tested in this way about $\frac{1}{3}$ of commercial balsam of Peru is found to be impure.—*Zeitschrift des Allgemein. Ester. Apot.*, April 10, 1872.

Incompatibles of Perchloride of Iron.—In the *Bulletin Général de Thérap.* M. Bouilhon gives the following list of substances incompatible with the perchloride of iron:—

Salts of silver—Protosalts of mercury—Alkalies, carbonates, and bicarbonates—The arsenites and arseniates—Borax—Tannin and vegetable astringents—The gums—The vegetable extracts—The infusions of plants—Albumen—Casein.

New Method of Preparing Sulphuretted Hydrogen.—If paraffine be heated to the boiling point with an equal or greater bulk of sulphur, sulphuretted hydrogen is freely given off. If a pound of the mixture is put into a flask of proper capacity and heated, a sufficiently free current of the gas for ordinary purposes will be given off, and at any time the reaction may be suspended by a withdrawal of the heat. The paraffine is changed into a paraffine oil.—*Ibid.*

Analysis of Koumis made at Davos, Switzerland.—Sp. gr. at 50° = 1.1280. In 100 parts, water, 90.346; alcohol, 3.210; lactic acid, 0.190; sugar, 2.105; albuminates, 1.860; butter, 1.780; inorganic matter, 0.509; free carbonic acid, 0.177.

Reactions of Alcohol.—Mr. Hugo Tamm, in a brief abstract of certain experiments upon the action of permanganate of potash upon various substances, such as filter-paper, tartaric acid, coal gas, tallow, turpentine, benzole, alcohol, ammonia, etc., states that the two most interesting facts which he found were that alcohol boiled with an equal bulk of a solution of permanganate of potash was partially transformed into acetate of potash, and that in the same condition ammonia was converted into nitrate of potash.

Emulsion of Turpentine.—I. Winchele Forbes commends highly (*Amer. Journal of Pharmacy*) the following method:—

First. Pour the turpentine into a two-ounce vial, and shaking so as to coat the inside of the vial with a film of turpentine; this is to prevent the action of the moisture usually present.

Secondly. I add one scruple powdered acacia, and mix thoroughly with the oil.

Lastly. Half a fluid ounce of water is added, and the whole is well shaken. A perfect emulsion is the result, requiring less time for its preparation than to read the foregoing directions. The bottle may then be filled up with mucilage, or, according to my experience, a better product is obtained with water simply.

The deviation from the letter of the law in regard to the gum strength of the emulsion needs no apology to the practical pharmacist, as the sole object in view is to emulse the oil, and it will be found that ten grains to the fluid ounce of emulsion will afford a product superior in all respects (especially in fluidity) to one containing more gum, and more nearly approaching the peculiar characteristics of that most perfect of all emulsions—cow's milk.

Manufacture of Collodium.—According to August Vogel, collodium is prepared in the following manner in the laboratory of the Royal University at Munich. Thirty parts (by weight) of finely powdered saltpetre are put into a glass cylinder with thirty parts of English sulphuric acid, and stirred with a glass rod until the saltpetre is entirely dissolved. Into this mixture are thrown two parts of cotton wool and stirred actively for five minutes. The cotton is then freely washed with large quantities of water until its reaction is scarcely acid. To hasten the operation, the cotton is then treated with strong alcohol until every trace of acid has been removed. The material is finally dried in thin sheets. This gun cotton is freely soluble in a mixture of equal parts of sulphuric ether and alcohol, and this collodium, poured upon a glass plate, leaves a perfectly transparent residue.—*Neues Repertorium für Pharmacie*, Heft I. vol. xxi., 1872.

Bed of Glauber's-Salt.—A deposit of Glauber's-salt has lately been discovered in the Caucasus, not very far from Tiflis and Marienfeld. In sinking a shaft the experimenters first passed through one foot of marl, two and a half feet of gray moist clay, seven of dark-gray bituminous saline clay, then penetrated a bed of pure Glauber's-salt to a depth of five feet, with a probability that the thickness was much greater. In the same region there are various lakes filled with solutions of Glauber's-salt, which furnish the apothecaries of that

neighborhood with what they need of that substance, as it crystallizes in perfect purity along the edge of the water.—*Harper's Monthly*.

Estimation of Purity of Glycerine by its Specific Gravity.

SPECIFIC GRAVITY.		Per cent. Glycerine.	Amount of Pure Glycerine to the Litre.
According to Fabian.	According to Metz.		
—	1.261	100	1.2612 kilogram.
1.232	1.232	90	0.1088 "
1.220	1.206	80	0.9648 "
1.179	1.179	70	0.8255 "
1.159	1.153	60	0.6918 "
1.127	1.125	50	0.5625 "
1.105	1.099	40	0.4396 "
1.075	1.073	30	0.3219 "
1.051	1.048	20	0.2096 "
1.024	1.024	10	0.1024 "

— *Vierteljahrschrift für praktische Pharmacie*, Heft 2, 1872.

Bromine as an Oxidizing Agent.—According to P. Waage, bromine is a very energetic oxidizer of all other substances, and will convert the sulphuret of a metal into sulphuric acid and the oxide of the metal.—*Ibid*.

Adulteration of Aniline Colors.—According to Joly, sugar is now extensively used to adulterate the aniline colors. It can best be detected by treating the dye with a mixture of alcohol and ether, which dissolves the aniline and leaves behind the sugar.—*Ibid*.

Upon Solution of the Metallic Benzoates in Fats.—M. Godin confirms the statement of M. Ricker that the metallic benzoates are soluble in the oils, and proposes to make cod-liver oil ferruginous in this way.—*Journal Pharm. et de Chemie*, April, 1872.

To Purify Tannic Acid.—M. Heinz states that commercial tannin owes its odor to a greenish resin, and that it may be rendered inodorous in the following way:—Dissolve the tannin in twice its weight of hot water. Introduce the solution into a glass vessel, and add one and a half parts of ether for every six parts of tannic acid. The mixture is greenish and turbid. After some hours the coagulated coloring matter precipitates, and the clear solution may be evaporated.—*Ibid*.

The So-called African Saffron.—By John R. Jackson, A.L.S., Curator of the Museums, Kew.—From the description of the so-called African Saffron by Professor Maisch, at p. 824 of the Journal, there seems no doubt but that the flowers are those of *Lyperia crocea*, Eckl., a scrophulariaceous plant of South Africa, small quantities of which have been imported into this country from time to time, chiefly for use as a dye.—*London Pharm. Journal*.

Test for Arsenic in Sulphuric Acid.—The presence of arsenic in concentrated sulphuric acid may be detected by cautiously adding drop by drop from 2 to 3 c.c. to a solution of a little stannous chloride in from 4 to 6 c.c. of hydrochloric acid of sp. gr. 1.12, the liquid being gently agitated after each addition. If arsenic be present, a yellow coloration changing to brown is produced; if not, the solution remains clear. This test is said to answer if the 500,000th part of arsenious acid be present.—*Dingl. Polyt. Journal*.—*London Pharm. Journal*.

Methylic Ether as a Means of Obtaining Cold.—Tellier has taken advantage of the extreme volatility of the ether produced by the action of sulphuric acid upon methylic alcohol as a means of obtaining cold. The various methods or machines employed may be found described in *Zeitschrift des Allgem. Oesterreich. Apotheker-Vereins*, June 1, 1872.

To Distinguish the Alcoolatures and Tinctures.—MM. Conche and Colton propose the following methods:—To ten drops of tincture or alcoolature (solution of fresh juice in alcohol) add five drops of the solution of the sub-acetate of lead; in the tincture a dirty yellow precipitate is formed, in the alcoolature one much less deep and verging on green.

A much more sensitive test is by adding to the preceding mixture fifteen or twenty drops of ammonia, when the precipitate deepens with the tincture, and on shaking with water a dirty yellow foam is formed; with the alcoolature the precipitate is white and the foam colorless.

A still greater sensitiveness is acquired by adding to the ammoniacal mixture a solution of sulphate of copper, which produces a green much more rapidly in the alcoolature than in the tincture; the first is also more yellow than the last.—*L'Union Pharmaceutique*, March, 1872.

Berberin in Coptis Trifolia.—In the *Neues Repertorium für Pharmacie*, Heft 4, Bd. XXI, 1872, Büchner confirms by analysis the discovery of Maish and Procter that berberin exists in quantity in gold-thread.

Acids of the Tomato.—According to S. D. McElhenie (*Journal of Pharmacy*), the acids of the tomato are citric, oxalic, malic, and tartaric in very small quantity.

Delicate Test for Biliary Acids.—Strasbourg (*Pflüger's Archiv*, IV.) announces an extremely delicate modification of Pettenkofer's test for biliary acids in the urine, suitable for clinical purposes. A strip of filterin-g-paper is dipped in urine, to which a little common sugar has been added, and on this paper, after drying, a drop of concentrated HCl is placed by means of a glass tube. If biliary acids be present the paper assumes an intense violet color.

Stramonium Smoking.—A. Hirschberg states that when cigarettes of stramonium are smoked for asthma, there is no daturin whatever received in the system, but that the active principles generated are pyridin alkaloids.—*Zeitschrift des Allgem. Oester. Apothek.-Vereins*, June 10, 1872.

Polygonum Hydropiper.—Rademacher has obtained an acid from *P. hydropiper* which he believes to be its active principle. He first exhausts two pounds of the plant with dilute alcohol, distills off the alcohol, evaporates the watery residue to one-third its original bulk, and then filters out the resin-oil deposit. Acetate of lead is then added to the liquid, and the yellow precipitate, after repeated washings, is decomposed by sulphuretted hydrogen. The filtrate is now shaken with ether, and the latter allowed slowly to evaporate. The crystals which form are soluble in ether, alcohol, and chloroform with difficulty in dilute alcohol. Under the microscope they resemble greatly urea and its form. They are green, of a sharp bitter taste, and strongly acid to mucous and general reactivity.—*Chem. Ztg.* 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 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Table Showing Amount of Distilled Water Requisite to Dissolve Certain Alkaloid Salts.

One part.	Crystallized Alkaloid.	Water necessary
Muriate of morphia, containing	0.80 parts.	20 parts.
Sulphate of morphia “	0.76 “	10 “
Acetate of morphia “	0.86 “	5 “
Sulphate of strychnia “	0.75 “	10 “
Muriate of strychnia “	0.83 “	8 “

—*Ibid.*

Cold Alcoholic Test for Albumen.—Dr. C. R. Drysdale reports from the Metropolitan Free Hospital (*The Boston Medical and Surgical Journal*, June 27; from *The Medical Press and Circular*), that he has tried the cold alcohol test for albumen recommended by Dr. Betz (*Memorabilien*, 1872), and that it has proved trustworthy in the cases tried by him. Dr. Betz remarks that boiling the urine is not always a sufficient plan when examinations are made in private practice, because albumen is not always thrown down by boiling. Also nitric acid is not certain in all cases. He mentions that a trustworthy and very easily obtained reagent is ordinary spirit as bought in shops. A portion of the urine is poured into a glass, and over it about an equal quantity of spirit, without allowing the two liquids to mingle. When albumen is present, the alcohol has a milky haze at the junction, and occasionally there are small nipples of albumen seen in the alcohol when the urine is very full of it. This process is so simple that it can always be made use of. According to Dr. Betz, this test will frequently show albumen when we are not inclined to think it exists on account of the absence of œdema, heaviness of the body (which is seen in children), foaming of the urine on micturition, scarlatina, or pneumonia. Dr. Drysdale has found the reaction in four cases of chronic albuminuria now under his care at the hospital.

The Influence of Pressure on Fermentation.—Mr. H. T. Brown (*The Academy*, June) has found that during alcoholic fermentation other gases besides carbonic anhydride are invariably given off. When malt ferments, he finds the gas unabsorbed by potash to be about $\frac{1}{100}$ of the total gas evolved. When fermentation takes place under reduced atmospheric pressure, the proportion of evolved gas not absorbed by potash is found to be considerably augmented, the increase being mainly due to hydrogen; and the oxidation products, acetic acid and aldehyde, are likewise more abundant in the fermented liquid. The author considers that water is decomposed during fermentation, dissociation of the water-molecules being favored by decrease of atmospheric pressure.—*Phil. Med. Times*.

Solubilities of Sugar in Dilute Alcohol and in Water.—100 parts (30 alcohol, 70 water) dissolve at 0° C., 65.5 parts of sugar; at 10° C., 67.9; at 40° C., 82.2 parts.

100 parts (50 of each) dissolve at 0° C., 45.9 parts of sugar; 14°, 57.1 parts; at 40° C., 68.4 parts.

100 parts (10 water, 90 alcohol) dissolve at 0° C., 0.7 parts; at 14°, C., 0.9; and at 40° C., 2.3 parts.

Absolute alcohol dissolves nothing.

Pure water dissolves at 0° C., 65 parts of sugar per 100; at 15° C., 66.1 parts; at 30° C., 69.8 parts; at 50° C., 82.7 parts.—*M. Scheibler, Deutsche Chemische Gesellschaft.*

Adulteration of Sulphate of Quinine.—There is no doubt but that quinia is largely adulterated in this country with the cheaper alkaloids of bark, and the *Indian Medical Gazette*, Aug. 1, states that out of twelve samples of sulphate of quinine purchased in Calcutta from as many different shops, six were largely composed of sulphate of cinchonia. The former alkaloid being in the form of needles, the latter of prisms, the microscope, of course, easily detects the fraud.

On the Discovery of the Adulteration of Volatile Oils with Alcohol.—Puscher some time since proposed that fuchsin should be employed to discover the above adulteration, as it is insoluble in the volatile oil when pure, but soluble in the adulterated specimens. Hager & Otto have, however, showed that there are so many oils which, even when pure, dissolve fuchsin that the test is of no value. Hayes' tannin test appears more trustworthy: if in a volatile oil the tannic acid remains pulverulent there is almost certainly no alcohol there.—*Vierteljahrsschrift für prak. Pharm.*, October 1, 1872.

A Fluid Adhesive Plaster.—Take of

Pulverized damar resin....	560 parts.
Oil of sweet almonds.....	142 “
Castor oil.....	70 “
Glycerine.....	39 “
Red aniline.....	q. s.
Spirit of sulphuric ether...	225 to 240 parts.
Add the aniline.	

Melt the first four materials together in a copper vessel, and after partial cooling add the spirit. In this way is made an emulsion like liquid of syrupy consistency, which may be spread on stiffened linen, skin, etc., and which in nowise irritates the skin. The surgeon may put the preparation directly on the wound, without previous warming. —*Ibid.*

Quantitative Examinations of the Alkaloidal Strength of Ipecac, Aconite, Tobacco, and Conium.—There is a paper of several pages length in the October number of the *Vierteljahrschrift für prak. Pharm.* on the above subject by O. Zeroffsky. He found ipecac root to yield emetia as follows:—

An acid decoction yielded 3.74 per cent. of the root used.

A spirituous tincture yielded 3.82 per cent. of the root used.

A chloroform preparation yielded 2.87 per cent. of the root used.

The dried root of *Aconitum napellus* yielded 1.6 per cent. of alkaloid; the fresh herb of *Aconitum Stoerkeanum* (just before opening of flowers), 0.17 per cent.; the fresh root of the same, 0.116 per cent.; the fresh flowering buds, 0.342 per cent.; the fresh herb of *Aconitum napellus*, 0.176 per cent.; the fresh root, 0.123 per cent.; the fresh flower buds, 0.435 per cent.; the fresh herb of *A. variegatum*, 0.167 per cent.; the fresh root, 0.109 per cent.; the fresh flower-buds, 0.453 per cent.; the fresh root of *A. Stoerkeanum* (after opening of flowers), 0.271 per cent.; the fresh root, 0.277 per cent.; the fresh flowers, 0.729 per cent. An ordinary sample of Russian tobacco yielded 5.8 per cent. of nicotine.

With conium the experiments did not yield any definite results; the causes of this are discussed by the author.

A NEW ALKALOID FROM VERATRUM SABADILLA.

According to M. Weigelin, there is a new alkaloid in *sabadilla*, for which the name of *sabadilline* is proposed. It is prepared by first making a decoction with water acidulated with sulphuric acid, concentrating and adding alcohol to precipitate the mucilaginous matters. After twenty hours' repose, decant, distil off the alcohol, and precipitate the filtered liquid by ammonia; dissolve the precipitate in ether, and evaporate the latter until it deposits a reddish resinous substance, which may be changed into a whitish powder by a series of solutions and precipitation in water.

The filtered ammoniacal solution contains the *sabatrine*, which is removed by agitation with amylic alcohol. Distillation is then prac-

tised; the residue dissolved by alcohol, containing some water, — deodorized by animal charcoal, the alcohol distilled off and ammonia added to the watery residue. The product is agitated with ether, which dissolves out the sabatine and leaves the pure sabadilline. The latter may be obtained in crystals by means of benzine. It is scarcely soluble in ether. Concentrated sulphuric acid dissolves it with a red color. Ammonia does not precipitate its solution. Neither the bichromate of potash, the ferrocyanide, or the iodide of potassium react upon it. It is neither a sternutatory or emetic. Its formula is $C_{11}H_{11}Az_2O_{11}$; that of sabatine, $C_{11}H_{11}Az_2O_{11}$; that of veratine, $C_{11}H_{11}Az_2O_{11}$.—*Journ. de Pharm. et de Chim.*, Sept., 1872

Method of Estimating the Strength of Ammonia in Solution.—The following method has been perfected by M. Fleck:—Make an alkaline solution of iodide of potassium by dissolving 50 grammes of iodide of potassium and 160 grammes of caustic soda, and a slight excess of the sublimate in a litre of water. One hundred cubic centimetres of this solution contain 1.5 gram. of mercury. In order to test, add to the ammoniacal liquid a cubic centimetre of a 10 per cent. solution of sulphate of magnesia, and add an excess of the reagent. All the ammonia is precipitated; the precipitate is washed with alkaline water, dissolved upon the filter by a solution of hyposulphite of soda, and the amount of mercury in it obtained by means of a standard solution of sulphohydrate of soda. The original precipitate was *l'iodure de tétra mercur-ammonium*, with the formula $AzHg_4I$ and H_2O_4 , and from this formula, with the known weight of mercury present, the amount of the ammonia can readily be obtained.—*Journal de Pharm. et de Chim.*, Sept. 1872.

Crystallized Digitaline.—Dr. Roucher asserts (*Les Mondes*, July 18) that the crystallized digitaline prepared by Nativelle is not a simple principle, but a complex body, and that its elementary analysis is incorrect.—*Chemical News*.

Detection of Spurious Kirschwasser.—According to Dr. Bonis (*Bulletin de la Soc. Chim. de Paris*, June 1, 1872), tincture of guaiacum strikes a deep blue color with genuine kirschwasser, but not with the spurious article. The coloration is said to be due to the presence of a trace of copper in the genuine kirschwasser, which metal always strikes a blue color with guaiac in the presence of hydrocyanic acid.

Test for Phenol.—According to C. Mène, when bromine is added in excess to a weak aqueous solution of phenol, there is formed a

yellowish white precipitate of tribromophenol. This reaction is so sensitive that one part of carbolic acid in 4,370 parts of water can be detected. In case of any doubt arising as to the nature of the precipitate, it is separated by filtration, washed, and put into a test-tube, gently heated along with some sodium amalgam; the liquid is then poured into a beaker-glass, and upon the addition of a few drops of dilute sulphuric acid, the characteristic smell of phenol is evolved, and the substance becomes visible in the form of drops.—*Chemical News*, July 12, 1872.

Analysis of the Empire Spring at Saratoga, N. Y.—By C. F. CHANDLER, PH.D., and F. A. CAIRNS, A.M.—One United States gallon of 231 cubic inches contains:

Chloride of Sodium	506.630 grains.
Chloride of Potassium	4.292 "
Bicarbonate of Magnesia.....	42.953 "
Bicarbonate of Lime.....	109.656 "
Bicarbonate of Lithia.....	2.080 "
Bicarbonate of Soda.....	9.022 "
Bicarbonate of Baryta.....	0.070 "
Bicarbonate of Strontia.....	a trace.
Bicarbonate of Iron.....	0.793 "
Bromide of Sodium.....	0.266 "
Iodide of Sodium.....	0.806 "
Sulphate of Potassa.....	2.769 "
Phosphate of Soda.....	0.023 "
Silica.....	1.458 "
Alumina.....	0.418 "
Fluoride of Calcium }	each a trace.
Biborate of Soda }	
Organic Matter }	
Total.....	680.436 grains.
Carbonic Acid Gas.....	344.609 cubic in.

—*American Chemist.*

Cultivation of Opium.—According to the *Zeitschrift des Allgem. Oester. Apothek. Ver.*, of August 1, the question of the cultivation of opium in Würtemberg has been settled by the experience of Jobst, whose opium was raised with a fair profit, and has been found to contain by analysis 12.8 per cent. of morphia, 0.9 to 0.12 per cent. of codeia.

Benj. Lillard says, in the *Nashville Medical Journal* for October: A small quantity of the imported seed of the white poppy was planted by Dr. Pitts, in the spring of 1871, in Kentucky, and the seed thus obtained used exclusively this year with very fine success, the plant being larger and more vigorous, and the capsules from two to ten times as large as those from the imported seed.

A sample of the opium, prepared this summer, was found to possess the peculiar narcotic odor and bitter taste, and presents a smooth, tenacious mass of a dark brown color. One hundred grains, when dried, yielded eighty-three of powder, and, upon examination, eleven of insoluble matter, mostly clay and sand, and ten of alkaloids, equal to about nine grains of morphia.

New Method for detecting Arsenic for Pharmaceutical Purposes.—Pour on pure tin crystals, stannous chloride, 4–6 cc. pure chlorhydric acid of 1.12 sp. g., shake until solution takes place, and add carefully, 2–3 cc. of the sulphuric acid to be examined, gently agitating. In the presence of arsenic the solution assumes a yellowish, then a brownish, and finally a dark grayish-brown, troubled color. 1,500,000 of arsenious acid may be detected.—*American Chemist*.

Lactucarium and Thridacium.—The *French Lactucarium* is obtained by incising *Lactuca sativa* and collecting and drying the juice which exudes. *German Lactucarium* is obtained in the same manner from *Lactuca virosa*. *Thridacium* is made by expression from *Lactuca sativa*.

According to L. Bultin, these preparations differ as follows:

	Ashes.	Soluble in Alcohol.	Insoluble in Water.
German Lactucarium.....	10.63	46.00	48.83
French “.....	7.50	46.85	21.52
Thridacium.....	33.90	39.50	Entirely.

—*Zeitschrift Oester. Apothek. Verein*.

Cerisin.—According to the *Zeitschrift Oest. Apothek. Verein*, of August 20th, Jos. Faulk, of Vienna, has introduced a substance into commerce, under the name of cerisin, which bids fair to take the place of wax in pharmacy. It is in dazzling white sheets of some lines in thickness, or in small blocks of $\frac{1}{4}$ to 1 pound weight. It has the consistency of wax, is odorless, and makes exceedingly beautiful preparations. It is offered at a much lower price than wax.

Koussin.—In the *Vierteljahrsschrift für prakt. Pharm.*, of July 1, Dr. Karl Bedall has a long paper on *Koussin*. He has prepared it in quantities by a process similar to that by which santonine is obtained, and the experience of thirteen years has shown that it is the active principle of kousoo. As he has got it, it is in the form of a yellowish-white powder, of a crystalline appearance under the microscope, but not really crystallized, slightly soluble in water, freely in alcohol, ether, and pure alkalies. He believes it to be of the nature of a resin, and gives its formula as $C_{22}H_{22}O_4$.

Against tape-worm he has found it very efficient.

He gives to an adult 40 grains, in from 2 to 4 powders, and the only evil effect he has ever seen is occasional nausea. No preparation of the patient, or especial dieting, is required.

Chinamia—A New Cinchona Alkaloid.—O. Hess¹ has found in the cultivated Indian bark of *Cinchona succirubra* an alkaloid which he believes to be new, and proposes to call *chinamia*. It crystallizes in long, fine, asbestos-like prisms, which contain no water of crystallization. It is moderately soluble in cold, very freely in hot ether, alcohol and benzole, very slightly so in dilute alcohol, not at all in water. Its solution in dilute acid exhibits no fluorescence. The platinum salt is a yellow amorphous precipitate, which can only form in concentrated solutions, as the double salt is, even at ordinary temperatures, fairly soluble in water; no less characteristic are its relations with the chloride of gold, for the latter forms in its solution a yellowish-white amorphous precipitate, which soon turns purple red, and the gold separates, whilst the solution is at first purplish-red, and becomes, on standing, brown. With the chloride of iron it gives no noteworthy reaction.—*Vierteljahrschrift für prakt. Pharm.*, July, 1872.

Preparation of Spirits from Lichens.—According to Dr. Arendt, in the Russian Provinces of Archangel, Pskow, etc., a spirit is prepared from lichens and mosses, by fermentation and distillation. This "moss-brandy" is said to be of fine flavor, and its preparation to yield a net profit of from 40 to 100 per cent.—*Chemical News*, September 6, 1872.

Boracic Acid as a Preservative.—According to A. Hirschberg, the addition of 15 grains of boracic acid to 2 lbs. of milk will keep it sweet in hot weather for five days. The usefulness of the milk is said not to be impaired, but the cream rises more slowly than normal.

Action of Oxidizing Agents on Brucine.—According to M. Luck, if there be added to a mixture of chlorate of potash and brucine, a few drops of sulphuric acid, a red color is produced, exactly similar to that evolved by the action of nitric acid on the same alkaloid; but, in the first place, a few drops of a solution of protochloride of tin decolorize the solution, whilst in the latter they change the tint to a deep violet.

M. Schome has found that chlorine water, ozonized water, chromic acid, chromate of potassa, and hypochlorate of soda (even in very weak solution), offer similar reactions.

Both authors believe that nitric acid reddens the brucia simply by oxidizing it.—*Journal de Pharmacie et de Chimie*, September, 1872.

Adulteration of Palm Oil.—G. Tissandier has shown that palm oil is often adulterated with water, even to as much as fifty per cent. Hager confirms this, but thinks that the water is added in the form of a boiling starch mucilage, with one per cent. of potash.—*Vierteljahr. für prakt. Pharm.*

On the Preservation of Aromatic Powders.—Reihl has shown that the oil obtained from some powdered cloves, which had been kept in a chest lined with zinc, contained a notable proportion of the metal, and therefore these aromatic powders should be kept in glass or porcelain.—*Ibid.*

Alkaloid of Chamomile.—Camboulises has examined the Roman chamomile to find the alkaloid and acid, which Pottone asserts that he has found in *Anthemis arvensis*, but without success. He asserts that there is no alkaloid in the Roman chamomile, and throws doubt upon the reputed discovery of Pottone.—*Ibid.*

Borate of Lime.—This salt is found native in the great pampa of Tamarugal in Peru. It exists in large quantities in the form of nodules, brownish exterior, but offering, when broken, a brilliant crystalline fracture. They are very slightly soluble in water, but dissolve freely in acids. The boracic acid in them is believed to be of volcanic origin. M. Thiercelin has found that the mineral contains from 16 to 18 per cent. of boracic acid.—*L'Union Pharmaceutique*, October, 1872.

A very Sensitive Test for Ammonia.—M. Lex has found that a trace of ammonia in a liquid can be recognized by treating the latter first with phenic acid, and then with chloride of calcium; if ammonia be present a green color will be developed.—*Ibid.*

Vanillic Acid.—In the October number of *L'Union Pharm.* M. P. Garles, of Bordeaux, has a paper upon the crystalline exudation of vanilla beans—vanillic acid. He finds that it is a true acid, making salts with lead, magnesia, zinc, alkalies, etc. On platinum it volatilizes without decomposition, but it is distilled with great difficulty. It is very soluble in cold ether, alcohol, chloroform, sulphide of carbon, fixed and volatile oils, very slightly soluble in cold, freely so in boiling water. Absolutely pure sulphuric acid renders it yellow; if a trace of nitric acid be present a scarlet color is induced; it produces a blue color with the persalts of iron; reduces the nitrate of silver and pro-

precipitates abundantly acetate of lead. By weak nitric acid it is very feebly attacked, by strong nitric acid it is rapidly changed into oxalic acid. It is isomeric with anisic, creasotic, and other similar acids.

Croton Chloral Hydrate.—The hydrate of croton chloral, according to E. Schering's latest communication, occurs in small, white, shiny, tubular crystals of peculiar odor, somewhat similar to that of blue-berries, and of a burning taste. Their formula is $C_6H_5Cl_2O$ and HO . They are soluble with difficulty in cold, easily in hot water, easily in alcohol and ether. By heating they melt and volatilize entirely, yielding exceedingly irritating vapors. Concentrated sulphuric acid deprives them of their water, converting them into pure croton chloral, which floats as a colorless, oily fluid upon the acid, which by warming is entirely destroyed with blackening and the development of muriatic acid. The purity of any sample is easily tested. It must melt at $78^\circ C$., fully disappear on heating, and make a clear solution in water and alcohol. The watery solution must be neutral in its reaction, by the addition of nitric acid and a salt of silver separate no chloride of silver, and on the addition of a caustic alkali or its carbonate yield an oily liquid insoluble in water (Allyl-*endichlorid*).—*Neues Repertor. für Pharm.*, Heft 5, Bd. xxi., 1872.

Java Cinchona Barks.—Julius Jobst gives the following analysis of Java barks, of which 104 seroons, of the aggregate weight of about 5,800 kilog., came into Amsterdam on the 14th of March:—

1. Cinchona Calisaya.		Cinchuria Hasskarliana.	
Quinia 1.10 per cent. = 1.49 of sulphate.		Quinia 0.50 per cent. = 0.68 sulphate.	
Quinoidine..... 0.48 per cent.		Quinoidine..... 0.81 per cent.	
Conchinin..... 0.12 "		Conchinin..... 0.11 "	
Cinchonia..... 0.33 "		Cinchonia..... 0.68 "	
Amorphous bases..... 1.36 "			
		Total..... 2.52 "	
Total..... 3.39 "			
Cinchona officinalis.		Cinchona paludiana.	
Quinia 1.90 per cent. = 2.58 sulphate.		Quinia 0.13 per cent. = 0.18 sulphate.	
Quinidia..... 0.99 per cent.		Quinidia..... 1.17 per cent.	
Cinchonia..... 0.23 "		Amorphous bases..... 0.77 "	
Amorphous bases..... 0.61 "			
		Total..... 2.07 "	
Total..... 3.73 "			

Cinchona succirubra yielded 3.5 per cent. of alkaloid, of which 1.7 per cent. were quinia, and a trace of cinchona.

—*Ibid.*, Heft 6.

Ammonia in Snow Water.—A. Vogel (*Neues Repert. für Pharmacie*, Bd. xxi. Heft 6) states that snow freshly fallen at a temperature of 15°–19° contains not a trace of ammonia, but snow which has lain on the field or housetop for some time contains it largely but in varying proportions. When the snow has fallen at a high temperature it contains some ammonia, even though fresh.

Argentine.—Dr. Geo. Martins details (*Bayer. Intelligenzblatt*, 18, Nr. 11) a case of poisoning by a preparation sold under the name of argentine for silvering copper, etc. An analysis showed that the liquid was a concentrated solution of cyanide of silver and cyanide of potassium.

Xylol.—According to Buchner the best method of exhibiting xylol is in gelatine capsules, which should contain from 3 to 12 drops.—*Neues Repert. für Pharm.*

Apomorphine.—The latest method of manufacturing this alkaloid is by the process of E. L. Mayer (see *Berichte der Deutschen Chem. Gesellschaft zu Berlin*, 1871, iv., Nr. 2, S. 121), who produces it by treating morphia with a solution of chloride of zinc at 120° C.

The Preservation of Hydrocyanic Acid.—In the *Bulletin de la Société Chimique* M. Petit communicated the results of his experiments on the preservation of hydrocyanic acid when diluted to one-tenth and one-thousandth. The acid diluted to one-tenth alters very rapidly, while the acid of one-thousandth, free or combined, when examined after six months, had preserved almost exactly its original standard. Still further by diluting to one-thousandth the acid of one-tenth, which had already undergone a marked change, the decomposition was arrested. The presence of ammonia does not seem to induce this change. M. Gautier recalled to mind that in his own experiments, on very concentrated hydrocyanic acid, the presence of ammonia always hastened the decomposition. M. Fordos remarked that medicinal hydrocyanic acid apparently undergoes no change, that it does not become discolored; that, however, it disappears entirely after a certain time, this result being due, probably, to a simple evaporation, the flasks never being hermetically sealed.—*Medical and Surgical Reporter*.

Origin of Guano.—According to Habel, guano is not the excreta of birds, but a deposit formed on the spot by decaying protozoa. The substance is probably now forming near the Chincha Islands, as ships anchoring in the neighborhood continually bring up guano adhering to their anchors.—*Zeitschr. Oester. Apothek Verein*, Oct. 1, 1872.

Coerulignon.—C. Liebermann made a communication, describing this crystalline substance, of a beautiful blue color, before Natural History Congress, at Leipsic. It is obtained during the purification of the crude acetic acid obtained from wood. An abstract of this communication may be found in the *Zeitschrift Oester. Apothek-Vereines*, February 1, 1872.

On a Simple Method of Detecting Water or Alcohol in Ether.—According to Böttger of Frankford, when about 10 c. c. of pure sulphuret of carbon is shaken in a test-glass with ether, if the latter contains no water, a clear solution results, but if any water be present, the resulting fluid is milky.

On the other hand, if some pieces of caustic potash are shaken with ether in a test-glass and the whole allowed to stand, if any alcohol be present, after 24 hours a yellowish color will be developed.—*Zeitschrift Oest. Apot.-Vereines*, December 20, 1872.

ACTION OF BORAX ON FERMENTS OF THE DIASTASE GROUP.

In a note recently presented to the French Academy, M. Dumas communicated the following interesting information relative to the action of borax upon the ferments of the diastase group:—

Solution of borax coagulates beer-yeast, and the supernatant liquor does not invert cane-sugar as yeast-water does. It dissolves albuminoid membranes; those, for example, which separate from white of egg when suspended in water.

Solution of borax neutralizes the action of yeast-water upon cane-sugar. If solutions of sugar and yeast be placed together in one tube, and solutions of sugar, yeast, and borax in another, the first will quickly give signs of inversion; the second will not.

Borax also neutralizes the action of synaptase. It is known that the bitter almond contains amygdalin, and the sweet almond the synaptase, which, mixed with the amygdalin, produces the essence of bitter almonds, accompanied by prussic acid. It suffices to suspend the meal of sweet almonds in the one instance in pure water, and in the other in a solution of borax, and to add amygdalin to both liquids, to demonstrate this influence. With pure water, the odor of essence of bitter almonds becomes increasingly manifest, and the presence of prussic acid becomes more and more evident by the formation of Prussian blue. With the solution of borax, neither is the odor of

essence of bitter almonds perceptible nor the formation of Prussian blue.

Borax neutralizes the action of diastase. If four tubes containing water and potato starch be kept at 70° C., the first without addition, the second with the addition of borax, the third with the addition of diastase, the fourth with the addition of both diastase and borax, it will be found that after several hours there will be no glucose present in the first and second; after the first quarter of an hour there will be a considerable and increasing quantity in the third; in the fourth, where the borax and diastase are both present, the conversion of the starch into glucose does not take place.

Malt suspended in water quickly yields an abundance of glucose if heated to 70° C., but the addition of borax arrests this action. With malt, water and borax, traces only of glucose are observed, which are probably due to its pre-existence in the malt.

Borax interferes also with the action of myrosin. Flour of black mustard suspended in water exhales almost immediately the odor of essence of mustard, which increases in strength. Suspended in solution of borax, the odor characteristic of mustard meal is perceptible, which is due to the presence of a trace of the essence already formed; but this does not augment, and there is nothing that recalls the known effects of water upon mustard, and the plentiful production of irritating vapors to which it gives rise.

So that borax, by a property as remarkable as unsuspected, neutralizes the action of yeast, synaptase, diastase, and myrosin. M. Dumas promises to make known its effects upon pepsine, and the bearings these curious reactions have upon the theory of ferments.—*Pharm. Journ. and Trans.*, January, 1872.

Detection of Morphia in Quinia.—The *American Journal of Pharmacy* publishes the following method:—Dissolve three grains of ferricyanide of potassium in a fluid ounce of water. Mix twelve drops of this solution with a fluid drachm of water, and add one drop of solution of ferric chloride. The reagent thus prepared is scarcely affected by a solution of pure quinia, but if one ten-thousandth part of morphia is present, a blue coloration is at once produced, and a larger quantity of morphia throws down a precipitate of Prussian blue. The absence of all coloration is proof of the absence of morphia. A blue color, however, does not prove the presence of morphia, as it may be produced by many other deoxidizing agents.

TOXICOLOGY.

TOXICOLOGICAL CASES.

IN Guy's Hospital Report for 1872, Dr. Thos. Stevenson has a paper with the above caption. The first case is that of a suicide who lived seventeen hours after drinking three fluid ounces of strong commercial nitric acid. Perforation of the stomach was found on post-mortem examination. The second case, is that of a man who died suddenly, apparently of asphyxia, some hours after taking a teaspoonful of strong liquor ammoniæ. At the autopsy, œdema of the larynx and of the lungs was found. The œsophagus was intensely red; the stomach normal. The third case is one of atropia poisoning, and contains nothing novel.

There are also two cases of mushroom poisoning; from what species was not ascertainable. The girl had taken but a single fungus, and three or four hours afterwards was seized with violent abdominal and cephalic pains. She vomited several times in the course of the day; was restless; had great thirst; occasional twitchings of the hands, and hot head with cold feet. During the night she slept but little, and suffered from increase of these symptoms. The next day she had some diarrhœa, and speedily recovered. The only treatment was warm abdominal fomentations.

The boy ate heartily and died in collapse in twenty minutes. On post-mortem examination the stomach and intestines were found much contracted, and their mucous membrane congested. The liver was very decidedly fatty.

ON THE ANTIDOTES IN ACUTE PHOSPHORUS POISONING.

BY PROF. BAMBERGER, OF WURZBURG.

PROF. BAMBERGER precludes this paper by the statement that the injurious agent in poisoning by phosphorus is the phosphorus itself, and not phosphoric acid. From this it follows, that after the inducing of

vomiting, which must always be the first step, the trustworthy antidote must have the power of preventing the vaporization of the particles of phosphorus still adhering to the mucous membrane. Substances having the power of oxidizing the phosphorus are *a priori* indicated. Upon this idea have been suggested liquor chlorini and burnt magnesia by Duflos, and chloride of lime by Scherer; these means of oxidation unfortunately act too slowly to be of any use.

As an antidote fulfilling in the highest degree the indications, Prof. Bamberger proposes the soluble salts of copper.

If a piece of phosphorus be treated with a solution of the sulphate of copper it will be almost instantly coated over with a black layer of phosphuret of copper, and in a little while upon this will be a layer of red oxide of copper.

In this state phosphorus does not volatilize at all, as it emits no smell, does not shine in the dark, nor evince the presence of fumes with paper moistened with the silver solution.

This action of the solution of copper must take place as readily in the stomach as outside of the body.

No opportunity has been afforded Prof. Bamberger to use this antidote, but Gerhardt and Vetter have done so with success.

In the year 1868 Andant used the oil of turpentine, and others have followed the practice. Finally, Vetter (*Virchow's Archiv*, Band 53) made an elaborate investigation upon animals, and found that the rectified oil and the German oil possessed no antidotal power, but that the acid French oil did. Köhler recommends only the impure acid oil, and the apothecary Jonas (*Wöhler Annalen der Chemie*, Band 34) states that in such oil the phosphorus becomes embedded in a spermaceti-like crystalline mass, and is entirely harmless.

Prof. Bamberger considers that Vetter's experiments do not establish the antidotal power of the impure acid oil, as out of five animals two died, and two received doses probably not large enough to kill with certainty, and one vomited repeatedly directly after taking the phosphorus.

Köhler's experiments are not given in detail. Out of twenty-five animals only nine died, but his doses apparently were too small to be certainly lethal. Personne gave to ten dogs 100 to 300 milligr. each of phosphorus and 10 grammes of turpentine, and lost only two. Curie and Vizier, in a similar experiment, lost all, which Vetter and Köhler attribute to their having used the pure oil.

In order to test the comparative value of the antidotes in a purely physico-chemical manner, Prof. Bamberger took three pieces of phosphorus of the same weight, placed them in capsules of the same size, covered No. 1 with a solution of water, No. 2 with a solution of the sulphate of copper, No. 3 with French oil of turpentine, and connected

each with a small pump in such a way that the vapor could be drawn through a solution of silver. The capsules were then heated uniformly by a water-bath and the vapors emitted slowly drawn through the solutions. The results were: in nine minutes the solution of silver in No. 1 commenced to color, and in thirteen, contained a distinct brownish precipitate, in twenty-two was black; in No. 2 the silver solution, after seven hours, had only the slightest tinge of color; in No. 3, in two minutes the silver solution commenced to change color, and in three-and-a-half minutes was deep black.

Prof. Bamberger was surprised at this result, and repeated the experiment, only keeping the phosphorus at the temperature of the room. In this trial the oil of turpentine and phosphorus changed their silver solution to an intense metallic black, before that of the water and phosphorus was distinctly affected.

Prof. Bamberger thus shows that the peculiar coating of phosphorus, which Jonas has stated occurs when the latter is placed in turpentine, occurs only slowly and probably not at all in the human stomach.

He finally details the experiments made upon rabbits by himself; in one set of these turpentine was administered after the phosphorus, in the other the coppery solution, and concludes as follows:—"From these experiments small doses of phosphorus, combated by means of turpentine, rapidly killed the rabbits, whilst, when the solution of copper was used, death only followed after the expiration of twice the length of time required by the first method, and after twice the dose of the poison; facts which certainly show the superiority of the solution of copper. Upon these grounds I believe I am correct in affirming that turpentine is not an antidote to phosphorus, and, as far as is known, the soluble salts of copper afford the most rational and successful treatment."—*Wiener Med. Presse*, January 21, 1872.

SYMPTOMS OF POISONING PRODUCED BY THE INJECTION OF A STRONG SOLUTION OF SULPHATE OF ZINC INTO THE VAGINA.

BY A. K. MINICH, M.D.

Mrs. G., aged 28 years, the mother of three children, was in the habit of using a solution of acetate of zinc by injection, for the relief of a leucorrhœa with which she was suffering.

I was summoned one morning in haste to her side, and learned that she had just injected about two drachms of sulphate of zinc in solution into her vagina. Soon afterwards she felt severe pain in the region of

the groin, which was followed by sickness at the stomach, and a feeling, as she subsequently described it, "as though her blood could scarcely struggle through her veins." That which first arrested my attention upon seeing her was a deadly pallor of the skin, which was milky in its whiteness. Her features were shrunken, her eyes almost fixed and of a peculiar bright lustre, tongue partially paralyzed, pulse rapid and scarcely distinguishable, at times dicrotic. The whole surface of her body was cold, and covered with a clammy perspiration; her general appearance and condition indicating a profound constitutional depression, and, as it seemed to me, a speedy dissolution. Large quantities of milk were immediately thrown into the vagina, to wash out and neutralize any poison that might still remain; ammonia and brandy were freely administered; sinapisms were applied to her chest, and cloths wrung out of warm water to her extremities. In about half an hour she began to rally, and continued to improve until recovery was complete. The milk drawn from her breast soon after my arrival at once separated into two portions,—a lower thick mass, looking like coagulated milk, and an upper thin and watery portion. Unfortunately, the milk drawn was lost, preventing a closer examination. Her child—a suckling—was removed from the breast until the third day, when it again took it without any untoward symptoms arising.—*Phila. Med. Times*, March 1, 1872.

GOOD NEWS FOR SMOKERS AND BEER-DRINKERS.

SMOKERS will be pleased to know from the report of Mr. Phillips, of the Inland Revenue Department, that during 1870 tobacco was very extensively adulterated, 312 samples out of 432 having been weighed in the balance and found wanting, the adulterating materials being wheat, rice, starch, sugar, liquorice, lampblack, and coloring-matter. With the exception of the lampblack, with the taste of which we are not acquainted, the offending matter was not very deleterious, and perhaps in many cases did more good (or less harm) than the real cavendish, which was the tobacco usually selected for practising on. The report on the beer is less satisfactory, for out of 14 samples examined 9 were adulterated with sugar, treacle, ground rice, liquorice powder, grains of paradise, and (in one instance) tobacco. It will be allowed that adulteration of 65 per cent. of the samples is a tolerable allowance, and we have very little doubt that from the smaller class of breweries a vast amount of poisonous matter is constantly poured forth, to be further improved by the "doctor" and the publican.—*Food Journal*.

POISONING BY CHAGRES' PILLS.

DR. JUAN CALIXTO OXAMENDI related his experience to the Academy in a case of chronic poisoning by Chagres' pills.

He stated that in last August he had been consulted by a Mr. Rodriguez Navarrete, who had been suffering with malaria, contracted in the country, and for which he had taken without any good effect, first quinia, then the Indian Cholagogue, and at last Chagres' pills, a remedy used with success in that section of the country, and of which he took two boxes before he could stop the paroxysms; but not feeling well, and noticing a gradual loss of strength, and emaciation, he consulted Dr. Oxamendi.

Dr. Oxamendi stated he found in his patient all the symptoms of what Van-Hasselt calls medicinal poisoning by arsenic. This poisoning "may be dangerous and even fatal in some cases" (Van-Hasselt, vol. 2, page 234 of the German translation, from the 2d Dutch edition).

Then Dr. Oxamendi enumerated several arsenical preparations, well known or secret, all of which may produce the poisonous effects.

Rodriguez Navarrete could stand as a type of this chronic poisoning. He had gastralgia, dyspepsia; he had emaciated almost to atrophy, particularly in the lower extremities, with anaesthesia and almost paralysis. Gangrene did not occur. The hoarseness, found with few exceptions in arsenic eaters and others under its influence, was very characteristic in this case. Navarrete already presented the arsenical dyscrasia, as shown by the condition above described, and the symptoms of chronic gastro-intestinal inflammation, as well as by the dirty color of the skin, the injected eye, the dark color of the lower eyelid, and the livid lip. Dr. Oxamendi described then other symptoms of a more advanced stage, and of which only the so-called *Rheumatismus Arsenicalis* was present in the case. The urine was not examined.

Dr. Oxamendi stated that diuresis and diaphoresis are recommended in these cases, especially in the shape of steam and sulphurous baths. To eliminate the poison from the system he advocates the use of sal ammoniac, as recommended by Hannon, in small doses, at first 0.03 grammes, morning and evening, and increasing to 0.15. This author explains its action by the following theory: Arsenious acid combines in the prima via with soda, and enters the system as an arsenite of soda, where meeting with the phosphate of lime it forms arsenite of lime, but little soluble, and phosphate of soda. The muriate of ammonia forms with these salts a soluble ammonio-chlorate of the arsenite of lime. Following this treatment, Mr. Navarrete was restored to health.

Dr. Oxamendi then asserted that these pills have been sometimes very successful, and that he would like to know their exact composition. They are said by some practitioners and pharmacutists to contain arsenious acid and quinia.*—*Anales de la Real Academia de Ciencias Médicas, Físicas y Naturales de la Habana*, September 15th, 1871.

PATHOLOGICAL ANATOMY OF CHRONIC LEAD POISONS.

Drs. A. KUSSMAUL and R. MAIER have a paper of some length with the above caption in the February number of the *Deutsches Archiv für Klinische Medecin*. It is chiefly occupied with the discussion of a case, of which the following is an outline:—

A man 35 years old had suffered for many years from chronic lead poisoning. The symptoms consisted of a pale yellowish skin, dyspepsia, constipation and abdominal pain, which twice in the latter part of his life amounted to severe lead colic, with dysuria, and slowing of the pulse. In the second of these attacks he died. In the beginning of it there was constipation with vomiting of yellowish matters, and afterwards profuse diarrhoea, at first fæcal, but at last the material passed was simply a yellowish liquid free from fæcal smell. This was accompanied with great strangury, and soon led to collapse, in which the patient died. At no time during life were there any decided nervous symptoms.

On post-mortem, the following lesions were found: 1. General emaciation. 2. Very great post-mortem rigidity of the heart and voluntary muscles 19 hours after death. 3. Marked icterus. 4. Marked dilatation of the stomach. 5. Chronic catarrh of the mucous membrane of the stomach, intestines, and ductus choledochus. 6. Atrophy of the glands of the stomach by fatty degeneration. 7. Slight fatty degeneration of the muscular wall of the stomach, especially near the pylorus. 8. Marked atrophy of the mucous membrane of the jejunum, ileum, and upper part of the colon, both of their stroma and their glands, the first in the form of thinning, the latter of fatty degeneration; especially atrophy of the intestinal villi, the glands of Lieberkuhn, and the solitary and Peyerian follicles. 9. Great thickening of the submucous layer of the stomach and of the intestines, by a hypertrophy of the areolar tissue and thickening of the sheaths of the arterioles, even to the obliteration of the lumen. 10. Fatty degenera-

* I am indebted to my pupil, Jno. Guitéras, for this abstract translation.

tion of the muscular coat of the intestines, chiefly of the small intestine. 11. Marked pigment degeneration of the heart muscle. 12. Slight periarteritis in the cortical layer of the brain. 13. Hypertrophy and sclerosis of the cellular tissue septa of many of the sympathetic ganglia, especially of the celiac and upper cervical.

SOME OBSERVATIONS ON POISONING BY CANTHARIDES.

DR. PALLÉ describes the case of some soldiers who had drunk by mistake a large quantity of tincture of cantharides. He says:—I shall never forget the sight that struck my eyes as I entered the ward; scattered in the room, some, squatting, were making painful efforts towards micturition and defecation, passing with difficulty bloody urine and red and viscid matter; others, bent on their beds, were vomiting repeatedly; and a few, pale and stricken down (paraplegic), were suffering intense agony. In general, the face was congested, the eyes sparkling, the pulse fast and frequent, the skin covered with sweat; the features, distorted on all sides, showed the most intense terror. The state of the urino-genital organs was worthy of special attention. The penis was swelled and painful, but not rigid; none of the patients was affected with the slightest amatory desire or priapism; vesical and rectal tenesmus, and dysuria were noticed in all the patients. As to the digestive organs, a feeling of burning and constriction in the throat, epigastralgia, vomitings of bilious and alimentary matter were noted, but no convulsions or delirium, no other cerebral symptoms besides the excitement caused by the sufferings and terror of the patients. The treatment was: emetics followed by warm baths; afterwards camphor and opium in emulsion, flaxseed tea, oleaginous injections, and poultices on the hypogastric region, under which all the patients eventually recovered.

Dr. Pallé wishes to call the attention to three salient points in the facts observed in cantharides poisoning: (1) the albuminuria; (2) the peripheric paraplegia, and (3) the total absence of aphrodisiac symptoms.

All the patients discharged albuminous urine in variable quantities. In the beginning the water was sanguinolent and albuminous in the same time, and when, the renal hemorrhage having ceased, the liquid assumed its natural color, all traces of albumen had disappeared. The duration of the symptoms varied from 4 to 8 days.

The improvement was very rapid; as soon as the irritation of the

urinary organs subsided, the medulla recovered its normal excitability, and the paralysis of the inferior members disappeared in a short time.

Only one of the patients was affected with incontinence of urine, which still existed six months after the accident. As this infirmity did not exist before, it must have been caused by the cantharides. —*Journal de Phar. et de Chemie*, June, 1871.—*Physician and Pharmacist*.

CARBOLIC ACID POISONING.

DR. W. E. TAYLOR relates (*Phila. Med. Times*, May 1) a case in which an ounce (by estimation) of the strong pure acid was taken undiluted.

Dr. Taylor says:—Two minutes after taking the poison, the patient was totally insensible; pulseless; pupils dilated; face pallid and pinched; the respiration was of a gasping character, and there had been an involuntary discharge of urine. The interval between the respiratory acts became longer, and, after one or two partial efforts, life ceased; respiration continuing for several seconds after the cardiac impulse ceased to be perceptible.

There were no convulsions nor vomiting; nothing beyond the condition above described. Death took place in about three minutes after the fatal draught.

There was a strong odor of carbolic acid in his breath, but no trace of it about his lips or face.

Post-mortem examination, thirteen hours after death. Rigor mortis well marked. Body well nourished; skin pallid, with some post-mortem discoloration about the shoulders, back, and hips.

Upon opening the abdomen, the odor of carbolic acid was very perceptible; the viscera were in a good state of preservation. The stomach was moderately distended, and intensely congested externally, being of a dark venous hue. Upon being opened, it was found to contain about one pint of a whitish-colored liquid smelling strongly of carbolic acid, and some undigested food having also the same odor. After removing the contents, the whole of the mucous lining gave positive evidence of the corrosive effects of the poison,—showing the characteristic white appearance. Beneath this white film the mucous membrane was intensely congested, of a chocolate color, strongly corrugated,—thicker, tougher, and much more rigid than normal. This condition was especially well marked in the cardiac extremity and along the greater curvature, and also in the lower end of the œsophagus, and in a less degree along the lesser curvature and at the pyloric

extremity, although no part of the internal surface of the viscus had entirely escaped.

The scalp and the meninges of the brain were very much congested, the vessels being filled with fluid blood of a dark color. There was no effusion of blood or serum either beneath the membranes or in the ventricles; and, with the exception of a very few bloody points of small size in the cerebrum, and some injection of the choroid plexus, the remainder of the cranial contents seemed to be in a normal condition.

The most marked feature in this case was the rapidly fatal result. It might almost be termed instantaneous, as, from the most careful estimate, not more than *three minutes* could have elapsed from the swallowing of the acid until death ensued.

Two modes, in accordance with which the death was produced, have suggested themselves,—viz.: 1. By its powerful irritant effect, applied, as in this case, instantaneously to the whole lining membrane of the stomach and œsophagus,—thereby causing “death from shock” in the same manner as a blow upon the epigastrium; or,

2. After absorption, by its anæsthetic and paralyzing effect upon the sympathetic and pneumogastric nerves and their connections, thereby suspending or destroying their vital action, and bringing about cessation of function in important organs supplied by them,—as the brain, heart, and lungs.

It is a well-established fact that concentrated carbolic acid, when applied to the skin, produces decided anæsthesia in a very short time. Dr. W. H. Jones, U.S.N., has upon several occasions applied the acid to the skin of his forearm, with the effect of lessening its sensibility in about twenty seconds to such an extent as to allow the part to be freely incised without pain.

It has been used upon several occasions on board ship to mitigate pain in opening buboes, etc., and always with good effect; and, if it causes anæsthesia when applied externally, there is no reason why the same effect should not be produced when it is applied internally; it therefore seems reasonable to suppose that the rapidly fatal effect of carbolic acid in this case can be accounted for in a satisfactory manner by its anæsthetic and paralyzing effect upon the great nervous centres, following its immediate absorption from the stomach.

Dr Harley relates a case of poisoning from an ounce of red impure carbolic acid. The patient never rallied from the shock which attended the taking of the drug, although death did not take place for five hours and a half. Active medical assistance was rendered in fifteen minutes after the poison was taken, and he could then be aroused sufficiently to speak.—*Medical Press and Circular*.

FALSIFICATION OF ESSENCE OF BITTER ALMONDS BY NITRO-BENZINE.

BY M. EDME BOURGOIN.

DIFFERENT methods have been suggested for detecting this falsification, but none of them is quite satisfactory. It has been proposed to take advantage of the different specific gravities of the substances, but the lightness of the benzine can always be counterbalanced and concealed by the addition of alcohol or some other suitable liquid.

Drajendorff proposes to add to some drops alcohol a very small quantity of the essence and add thereto a globule of sodium; the coloration becomes more deep in proportion as the nitrous substance is more considerable.

Another method is to distill the mixture in the presence of iron filings and acetic acid, and add to the product a trace of lime, according to the method of M. Berthelot, and to seek to develop a bluish violet color by the addition of solution of hypochlorite of lime. This process is excessively sensitive when the pure nitro-benzine is operated on, but the presence of oil of bitter almonds interferes most singularly with the reaction.

The following simple method is now proposed as efficient:

Treat a small quantity of the suspected liquid in an assay tube with little less than its weight of caustic potash; agitate to favor the action of the alkali. If the essence be pure it takes a yellowish color; if it contain nitro-benzine, this yellow soon passes to a yellowish red and in a few minutes to green.

If a small quantity of water be now added the mixture plainly separates into two layers, the inferior yellowish, the superior green, which becomes red in a day or so.

Alcohol, instead of interfering with this reaction, appears to favor it. The green color develops more rapidly when the mixture is heated. —*Journ. de Pharmacie et de Chimie*, April, 1872.

CURE OF NITRATE OF SILVER STAINS.

IN the *American Practitioner* of June, 1872, after some general remarks, Dr. L. P. Yandell says:

The two cases which have suggested this report are similar in many respects. Both had been treated unsuccessfully for epilepsy by nitrate of silver. Both contracted syphilis, and for tertiary symptoms got

iodide of potassium. This drug was given in from ten to sixty grain doses, thrice daily, for a number of months, in connection with ferruginous or bitter tonics. One of the patients was forced to discontinue the iodide because of its disagreeable effects upon the system. The other took it until all traces of syphilis had passed away, and he increased in flesh under its use. In both cases the fading of the stains was gradual. In the first case there is a faint trace of discoloration remaining, though it is scarcely perceptible. In the second, which was much the darker of the two, there is not a shadow of the disfigurement. The iodide of potassium was not given in either case with reference to the cyanosis, and its beneficial effects were observed by me accidentally more than a year after their occurrence. It may be well to state that both patients were treated by the moist mercurial vapor-bath during much of the time that they were using the iodide of potassium, and the abundant diaphoresis may have assisted the action of the iodide.

DISPENSING OF POISONS.

MR. WM. C. BAKER proposes the following method of preventing mistakes :

1. All bottles on the shelves containing such substances as tincture of aconite root, tincture of digitalis, Fowler's solution, tincture of opium, tartar emetic, bichloride of mercury, etc., are of blue glass, with a red caution label on the back of each bottle.

2. Extracts of aconite, belladonna, nux vomica, opium, digitalis, etc., are contained in the ordinary jars properly labelled—and then enclosed in a tin can, also labelled with red letters painted on the tin.

3. The powerful alkaloids, as strychnia, veratria, atropia, morphia, and such articles as arsenic, hydrocyanic acid, etc., are kept in their original bottles, in a closet under lock and key, and when dispensed, the assistant dispensing calls another to witness that the article and quantity dispensed corresponds with the prescription ; a note is taken by whom the prescription was *vised*.

This plan, strictly adhered to, furnishes an efficient safeguard, and is attended with so little trouble that it may be readily adopted in every store.

All my labels for poisonous drugs, liniments, and medicines for external applications, are printed on bright red paper—some of which have a *sanded* border. The object of this is that even in the dark, by the sense of touch, they may be distinguished from other labels—

ALCOHOLIC PARESIS AND PARAPLEGIA.

DR. J. LOCKHART CLARKE believes that alcoholic paraplegia is generally preceded by various nervous symptoms, giddiness, a sensation of being lifted from the ground, a sensation of choking on going to sleep, numbness, various pains, chronic tremulousness, fibrillar quivering of the muscles, unsteadiness of gait, and general uncertain control of voluntary motion, imperfect articulation from this cause, loss of energy, etc. For these symptoms he has found most useful full doses of nitro-muriatic acid, with a little of Battley's sedative solution. And after a few doses of this, with some mild purging, he combines the acid with perchloride of iron, quinine, and strychnia, and the occasional use of the Turkish bath.—*London Lancet*, March 30, 1872.

In a previous number of the same journal Dr. Saml. Wilks bears testimony to the existence of alcoholic paraplegia, and states that the most important part of the treatment is the sudden and complete withdrawal of the stimulus—that *delirium tremens* in his experience never results, although he has had numerous and very bad cases. He recommends "the ordinary treatment, and especially the use of such medicine as the iodide and bromide of potassium before the use of galvanism and tonics."

POISONING BY CORROSIVE SUBLIMATE.

DR. G. S. GALEE reports the case in the *Medical and Surgical Reporter* of Mrs. S. æt. 40, who took purposely a large quantity (by estimation 3 j.) of the bichloride of mercury. The doctor found his patient, half an hour after the ingestion of the poison, bolstered up with pillows in a sitting position; saliva was copiously flowing from her mouth; countenance pinched, anxious, and of a bluish-white hue; the whole surface was cold, and bathed in a profuse clammy sweat; the pulse was small, weak, and beating sixty to the minute.

Her sufferings were terrible. She complained of a styptic, acid, metallic taste, burning and constriction of the throat, burning, griping, and tearing pains of the stomach, accompanied by a deathly nausea, but no vomiting. She had, previous to his arrival, thrown off half an ounce of mucus. The doctor administered large draughts of warm water, and, after the stomach had been repeatedly washed out, white

of eggs and milk. The vomiting continued and became very severe, and finally fresh blood and patches of congested mucous membrane were thrown up, followed by alarming prostration. Half a grain of morphia given by the mouth immediately checked the vomiting. In three-fourths of an hour the dose was repeated, and afterwards smaller quantities of the alkaloid given. White of egg and milk were also exhibited from time to time. Forty-eight hours after the taking of the mercurial she had 4 liquid (one bloody) stools, with severe griping. Ice was used for the intense thirst she suffered. The final result was recovery.

POISONING BY VANILLA-ICES.

THE German medical journals call attention to the circumstance that several cases of poisoning by vanilla-ices have in late years occurred in Paris, Altona, Munich, Vienna, and other places. Maurer has recently related an instance in which, after the use of these ices, a large family suffered from the symptoms described as having been present in the other cases, viz., frequent vomiting and diarrhoea, assuming in some of the patients a choleric form character. All the patients recovered. What the nature of the poison may be has not yet been ascertained. In two observations on the remaining portions of the poisonous ices, traces of lead, iron, and tin were present; but the combination of lactic acid with oxide of tin has been ascertained not to be poisonous. Schroff believes that the poison is produced by the use of cashew-nut oil to besmear the vanilla-pods.—*Medical and Surgical Reporter*.

DEATH FROM THE INHALATION OF NITROUS OXIDE GAS.

BY W. J. PURCELL, M.D., OF NEW YORK CITY.

ON Wednesday, March 20, Mrs. Ann O'Shaughnessy took the gas for the painless removal of some teeth. One bagful, containing about four gallons, was administered, but not without great trouble from the struggles and resistance of the patient, who appeared to labor under severe nervous irritability. This not being sufficient to produce anæsthesia, a second bagful was given, and after a few inhalations the dentist proceeded to extract the teeth. About four were removed, when the patient's head was observed to fall over on her left shoulder, and she was discovered to be insensible. Efforts were made to revive her, but in vain. At the post-mortem nothing was found save some lung congestion. At the coroner's inquest it was made out that the gas was probably pure, but that the mouth-piece used was imperfect, allowing the carbonic acid to be rebreathed.—*Medical and Surgical Reporter*.

Chinese Treatment of Tetanus.—This mode of treatment of tetanus has been seen by English physicians in China and India to be successful:—The patient smokes in a pipe a mixture of from twenty to twenty-five centigrammes of crude opium and tea or rose leaves, which are worked up with a small quantity of molasses. When smoking he must inspire as deeply as possible, and continue this operation until the narcotic influence is noticed. This continues then, as a rule, three or four hours. The smoking is repeated as soon as the tetanic symptoms reappear. In the mean time as much nourishment as possible is given. In using opium thus it must be remembered that its narcotic effect is somewhat neutralized by tobacco.—*Physician and Pharmacist.*

POISONING BY CROTON OIL.

DR. G. H. SNEAD reports the following case in the *Richmond Med. and Surg. Journal* of June, 1872. Mrs. S. took by mistake, the third morning after confinement, two teaspoonfuls each of croton and sweet oil. For the abdominal burning and drastic purging, which came on very shortly, the nurse gave milk freely.

Drs. Winn and Snead saw her two hours after the accident; her pulse was beating 150 to the minute and scarcely perceptible; the entire surface was bathed in a cold, clammy sweat; her countenance sunken, with copious watery, choleraic dejections every few minutes. They administered gum-arabic water freely, and afterwards white of egg every hour; also 25 drops of laudanum every half hour till 75 drops were taken. At twelve o'clock *A.*, six hours after the taking of the oil, the bowels moving incessantly, pulse 160 and sinking, skin deathly cold, and physiognomy betraying great nervous prostration. Continued mucilaginous drinks and white of egg, also gave $\frac{1}{4}$ grain of opium and 2 grains acetate lead every two hours. Three o'clock *P.*, vomiting of dark-greenish matter, pulse quivering, and skin intensely cold. Brandy was given and the pulse responded promptly to its use, and always flagging when stimulants were suspended beyond the usual time. Twelve o'clock at night, pulse 160 and very feeble, complexion livid, bowels still unchecked. Stimulants freely administered, mustard sinapisms covering extremities and stomach, friction over surface.

Second day, pulse same, bowels moved every half hour, mucus clear, features contracted, lips purple, and surface cold. Twelve o'clock at night—bowels moved every half hour, pulse 150 and sinking, skin very cold and clammy, vomiting of dark-greenish matter, picking at the bed-clothes, and restless.

Third morning, pulse 140, bowels checked, skin warmer, with vomiting lessened. Ordered lime-water and milk, stimulants, blister to stomach, rubefacients to extremities. Eight o'clock *P.*, skin more pleasant, vomiting relieved, pulse 120.

Fourth morning, skin much improved, bowels quiet, but little vomiting, physiognomy much more favorable, pulse 100.

Fifth morning, reaction thoroughly established.

Patient recovered without any inflammation or any other injurious consequence, except the shedding of her finger and toe nails almost entire, due to the suspension of vitality in the extremities during three days.

RAPID DEATH FROM STINGS OF BEES.

BY J. O. SANDERS, M.D., CARROLLTON, MISSISSIPPI.

APRIL 18th I was called to see a patient stung by bees. Mr. S., an intelligent man, gave the following account: Louis —, a negro, aged about 45, climbed a tree where bees had swarmed on a limb, for the purpose of hiving them, carrying with him a saw. As soon as the limb commenced falling, the bees arose *en masse* and covered his head and face. He descended immediately, and, as soon as he reached the ground, commenced running as fast as he could; ran around three sides of a yard, some two hundred steps, passed through an open gate, and fell to the ground. Mr. S. ran to him with a bottle of spts. camphor, and succeeded in forcing him to take one swallow; the patient protesting at the time against assistance, declaring that he would certainly die. After two or three irregular and partial respirations he expired. Mr. S. thinks it could not have been more than five minutes from the time he was attacked by the bees before he breathed his last. When I arrived, about an hour and a quarter after the accident, I could, on careful examination, find no signs of life. He was a vigorous, muscular man, and in perfect health, so far as I can learn. Was death due in this case to direct nervous shock, or to absorption of virus, or both?—*Medical News*.

Arsenic in Sulphate of Potash.—A circular has been issued by M. Bussy, Director of the Paris School of Pharmacy, stating that he has received information of a serious accident that has resulted through the sending out by a Paris wholesale house of sulphate of potash, containing a certain proportion of arseniate of potash, and recommending that no *pharmacien* should receive or deliver to the public any product that he may have received as sulphate of potash, unless he has previously ascertained that it is not contaminated with the arseniate.

POISONING BY DECAYED PLUMS.

DR. JNO. DOUGALL reports the following very interesting case in the *Glasgow Medical Journal* for May, 1872:—J. M'L., a girl, aged eight

years, ate a quantity of decayed plums. Some hours afterwards she felt sick, and during the following night the sickness increased, accompanied by gastric pain. Next day her mother noticed a profuse papular eruption on most of the body, which she thought was small-pox. On the third day from this (3d Sept.) I saw her. On the face blood was oozing from twenty or more parts, the intervening surface consisting entirely of various-sized bullæ distended with white opaque serum. The hairy scalp seemed in a similar condition. There was severe double conjunctivitis, photophobia, and lachrymation. From both nostrils were dripping gelatinous strings of sherry-colored mucus. The lips and angles of the mouth were raw, fissured, and bleeding. Blood was oozing from the spongy and turgid gums. The tongue was swollen and slightly furred. Ptyalism was extreme; her chin, denuded of epidermis, was bathed in a mixture of saliva, mucus, and blood. On further examination, the whole body, except a few patches of intensely congested skin, was found covered with bullæ or denuded of epidermis. The inner portion of both thighs, the sulcus between the buttocks, the perinæum and vulva were one raw, bleeding surface, while from the vagina a profuse muco-sanguinolent discharge was issuing. Pulse 125, weak; bowels confined; urine scanty and high-colored. A laxative was prescribed and nourishing diet. On the following morning the surface of the face was completely raw, which apparently was the state of the entire scalp, as the lower parts of the hair were silted up by a brownish viscid matrix—the thickened contents of ruptured bullæ. On the body several of these had burst, leaving a raw surface on their site, while many new ones had arisen. The bowels were freely opened, the dejecta resembling tar, and the urine diluted porter. These black excreta and the other conditions continued for a week, by which time she was in reality “flayed alive,” the body being one raw, red mass. The entire hair of the scalp, eyebrows and eyelashes were shed. The nails of the fingers and toes all came off, attached to portions of skin. She recovered slowly, and at present (six months after) is in good health. The hair and nails have grown. There is an opacity at the outer margin of the left cornea; a cicatrix under the left eye, and on each shoulder there are still two large eschars, much raised. None of the teeth came out, nor were any of the other children who had eaten the plums known to be affected.

HYDRATE OF CHLORAL AND BROMIDE OF POTASSIUM IN STRYCHNIA POISONING.

MR. E., an adult, took one grain of strychnia, and was seen, fifty minutes afterwards, by Dr. E. H. Coover, who used the following mixture:—

Hydrate of chloral, $\frac{3}{4}$ ss.; Bromide of potassium, 3 iij.; Water, $\frac{3}{4}$ iss.; and Syrup of orange, $\frac{3}{4}$ iiss.

The patient was in violent tetanoid convulsions. The quantity of the mixture used is not definitely stated; but in one minute the symptoms were all relieved. A good recovery was effected.

BROMIDE OF POTASSIUM IN POISONING BY STRYCHNIA.

BY C. B. BATES, M.D., SANTA BARBARA.

J. D., aged 22, had taken about ten grains of strychnia on an empty stomach. Upon my arrival, about half an hour afterwards, I found him in a most violent tetanic convulsion, and at once forced him to swallow a dose of tartar emetic and ipecac, which after a time operated well. During the whole of this time convulsions were recurring every few minutes, and I gave him one grain of sulphate of morphia with about forty of bromide of potassium. Soon the paroxysms decreased in violence, and the intervals of rest became longer. The bromide of potassium, in doses of forty grains, was repeated every hour until he had taken half an ounce, when he was out of danger, and all that remained of the muscular spasm was an occasional jerking of the muscles of the lower jaw.—*Pacific Med. and Surg. Journal*.

POISONING BY CAMPHOR.

DR. JOS. R. BECK (*St. Louis Med. and Surg. Journal*) reports two cases of camphor poisoning:—

CASE I. Upon arriving at the house I found the boy lying upon his mother's lap, in strong convulsions. The boy was three years of age, and well grown. His scalp was intensely hot, and the appearance of his face indicated severe cerebral disturbance. The extremities were quite cold, the abdomen retracted, and the patient apparently moribund. Accidentally my nose was brought into the immediate vicinity of the child's mouth, when I at once perceived the peculiar odor of camphor. A few short and well-directed inquiries developed the following history:—About ten o'clock of the morning of that day the mother had given him a piece of camphor the size of an English marrowfat pea, and this the child chewed and swallowed. During the remainder of the day the child seemed as lively as usual, until about four o'clock P.M., when, without any premonitory symptoms, he fell over in a convulsion, which continued without intermission until my arrival, at five o'clock.

As the child was entirely unable to swallow, he was ordered an enema of two ounces of whiskey, suspended in two ounces of thin starch, to be repeated in two hours, if necessary; also bags of pounded ice to the scalp until the convulsion ceased. When I saw the patient again at 7.30 P.M. he had entirely recovered, and the second enema was not required.

CASE SECOND.—About six o'clock in the evening of the 30th of November, 1871, I was sent for to see R. J. L——, forty-two years, stout, healthy, and robust, who was then, and had been for nearly ten hours prior to that time, suffering from a violent abdominal pain, similar to that of hepatic colic. He was at this time very weak; in fact so much prostrated, that his voice, usually a deep bass, had sunk to a husky whisper, and a cold clammy perspiration covered his face and hands with large beaded drops. He talked most of the time in a low, muttering, delirious way. His extremities were cold, his abdomen retracted, and these symptoms, taken in conjunction with the looseness of the bowels for some hours past, and the haggard, anxious look upon the face, called to my mind Asiatic cholera.

Upon inquiry I learned that he had taken a tablespoonful of a solution of camphor from a bottle, which at that time stood upon a table in the sick-room, for colicky pains. This seemed to make him feel some better for a few minutes, but the pain soon set in sharp, decided, and more violent than ever. In addition to this, violent vomiting also began, and as the dose was repeated twice during the following four hours, he became more exhausted than ever. Upon making an examination of the solution in the bottle, I found it to consist of a *strong concentrated solution in alcohol*.

The treatment in this case consisted of sinapisms to the extremities, and an enema of thin starch, three ounces, whiskey four ounces, ammon. carb. ten grains; to be repeated in four hours. The stomach being so irritable as to reject any and all substances, whether food or medicine, the enemas were kept up for forty-eight hours, reducing the amount of whiskey half an ounce at each injection. The patient began to convalesce slowly, and it was not until the twelfth of December that he was discharged from treatment. He shortly afterwards left the city, and I have not heard from him since.

AMERICAN HELENium.

DR. J. M. BIGELOW calls attention to the poisonous properties of some of the American plants of the genus *Helenium*, especially *H. tenuifolium*, Nutt.

He quotes Dr. Galloway, of Kosciusko, Miss., as saying:—

“The first effect that is observable after a horse or mule has swal-

lowed a bit of the weed, is a twitching of the eyes and a dodging of the head, as if to avoid some imaginary blow. This is followed by twitchings in other parts of the body, which increase in frequency and severity until they pass into general convulsions of such violence as to throw the animal upon the ground. The spasms recur at intervals of a few minutes, and in most cases terminate in the death of the animal, unless timely remedies are employed. The convulsions are of a tonic character, and on their cessation the animal breaks out in a very profuse perspiration. In the intervals between the spasms the animal will eat greedily. The remedy consists in the prompt administration of lard or oil in some form. The first effects are observed within fifteen or twenty minutes after the weed has been swallowed. The active properties seem to reside chiefly in the top or bloom of the plant. I have seen sheep eat with seeming impunity the young plant. On the other hand, cattle are not unfrequently poisoned in the late fall or winter by eating the dried weed, after it has been killed by the frost. It is very rarely that stock raised here will bite it, even when hitched within its reach, unless very hungry and restless. Horses raised in Tennessee, Kentucky, or Texas are often poisoned by it. A few years ago a gentleman passed through this place with a drove of ponies, about twenty-five in number, from Texas. He arrived about noon, and remained until four o'clock p.m., when he started forward for a watering-place, five miles distant. The animals meanwhile, in feeding in the open lots and grounds around the town, had picked up so much of the sneeze-weed that eleven of them died before reaching the watering-place.

"A very small quantity of the sneeze-weed suffices to cause death in an animal. Its effects on the human economy appear to be equally deleterious. A few years ago a neighbor of mine had some flour prepared from wheat that had been threshed in a lot in which the sneeze-weed grew. A biscuit made from this flour, and eaten without butter, produced in a lady general nervous twitching. Two other members of the family partook of the biscuit, but ate freely of butter with it, and escaped any unpleasant symptoms. Four negroes eating of the same biscuit without butter were all poisoned. They presented the same phenomena of spasmodic action of the muscles, accompanied with more or less delirium and loss of consciousness. A small sack of the flour was sent by this gentleman to his sons in the army, before its poisonous character had appeared, and all who ate of it were affected in a similar manner."

Dr. Lewis, also of Kosciusko, writes: "In 1866 a squad of Federal cavalry was stationed at Goodman, Miss. Many of their horses died from eating sneeze-weed; some recovered by the use of oil."—*Detroit Review of Medicine*.

INJECTION OF AMMONIA INTO THE VEINS AS A REMEDY IN SNAKE-POISONING.

THROUGH the courtesy of E. C. Bayley, Esq., Secretary to the Government of India, Home Department, we have had an opportunity of perusing a correspondence which has passed between Professor G. B. Halford, of Melbourne, and Dr. Fayrer, on the efficacy of injecting liquor ammoniæ into the veins, as a remedy for snake-poisoning. Dr. Fayrer asserts that his frequently repeated experiments on the dog prove that in really severe and effectual bites this plan of treatment does no good, and that injecting any other stimulant would be of equal avail in cases where stimulation might be beneficial. Professor Halford appeals to his experience of human beings, who had been bitten by the tiger-snake, recovering under this plan of treatment, and says that experience gained by experiments on dogs may not be true with regard to men. There can be no denying that men have recovered after having been bitten and subsequently had ammonia injected into the veins, but so have men who have been bitten and had no ammonia injected. The matter is one for discriminating and unbiassed experiment and observation. Doctors are not remarkable for concord regarding questions less difficult of satisfactory solution than this, and the only way of settling this issue is to take every opportunity of putting the vaunted remedy to trial, carefully study the case, and record it. Both Fayrer and Halford agree in thinking that ammonia is a good stimulant, and should be given in all cases of snake-poisoning. The question is—is Halford's plan of injecting it into the veins more effective than exhibiting it by the mouth or subcutaneously injecting it? We trust that those of our readers to whom an opportunity of putting the practice to trial offers may do so and report the result. It is always difficult in any case to say what might have happened had a certain thing been done or not done; but accurately recorded clinical experience is the only safe ground of conjecture, and the only sound basis of assertion in such matters. The quantity of liquor ammoniæ recommended for injections of this kind is 30 minims of the liquor ammoniæ, B. P., specific gravity .959.

The treatment is said to be equally effective in asthenia, arising from other poisons or causes; we have read of its successful employment in a case of poisoning by chlorodyne.—*Indian Med. Gazette*, June 1, 1872.

Hypodermic injections of Ammonia.—Dr. Zuelzer, of Berlin, has practised injections of ammonia with very good results in cases of fevers, when the profound asthenic symptoms threaten speedy dissolution. He injects from twenty to thirty drops of the solution, divided

into four injections, one in each limb. In no case have any grave accidents occurred. In many cases the results were both speedy and permanent. The formula used was:—

Take of Oil of Aniseed..... 1 part.
 Alcohol (at 85°).....24 parts.
 Liquid ammonia (liq. ammon. fort. ?)... 5 “

Mix.

He commends most highly this treatment in all cases of collapse or depression threatening death, especially when the cause is a transient one—as in poisoning, pernicious chills, etc.—*Lyon Médical—Revue de Thérap. Méd.-Chir.*, July 1, 1872.

ASSERTED ANTIDOTAL POWER OF CHLORAL IN STRYCHNIA POISONING.

At the séance of the French Academy of June 3, M. Orr offered a communication upon Liebreich's paper on the antagonism between strychnia and chloral. In his essay M. Orr stated that he had experimentally proven that the dose of chloral which Liebreich had relied on as being mortal to rabbits was very often not so; that the same was true of strychnia, and that consequently the investigation of Liebreich was not to be relied on as proving the respective antidotal powers of the drugs.

At a later séance M. Orr stated that further experiments had shown him that if a certainly fatal dose of chloral was given to a rabbit, the hypodermic injection of strychnia did not affect the result. He, however, stated that his own investigations were not complete, and that he was not ready to give a definite result.—*Gazette Médicale*, July 6, 1872.

POST-MORTEM DELIVERY.

THE *Medical Press and Circular* of April 3 contains two letters by Drs. Swayne, of Carrick-on-Shannon, and Lanigan, of Ballymahon, describing two instances of *post-mortem* expulsion of the fœtus through the agency of gaseous distention of abdomen. Dr. Swayne states that he “never heard or read of a similar instance.” We suspect that the incident is not an uncommon one in Indian medico-legal practice. We can recall at least one instance of such an occurrence. The body of a pregnant woman is despatched from a distant part of a district, and wrapped up rather loosely in a coarse cloth and bamboo matting. On arrival at the Sudder station the civil surgeon finds it semi-putrid, eyes bursting, limbs widely apart, and abdomen swollen, and hard as a

drum. On removing the coverings, a foetus is found between the thighs, and the uterus not unfrequently prolapsed, while the bystanders declare that when the body was started nothing of the kind was observed. Dr. J. H. Aveling gives notes, in *The Lancet* of April 27, of six instances of *post-mortem* delivery. In five of these the delivery took place after the women had been committed to their coffins and graves. These examples are drawn from old records, but they have an air of circumstantiality and truth about them. In one instance the infant was extracted alive from the coffin. It would be very interesting and medico-legally important to find, as we have hinted is probable, that what is considered in England a curious and rare phenomenon, is in India a common and familiar circumstance. In *The Indian Medical Gazette* for August, 1867, Dr. R. F. Hutchinson, then civil surgeon of Patna, has recorded a good case of *post-mortem* parturition, which he considered unique. The medico-legal relations of effects produced by putrefaction can, perhaps, be better studied in India than in any other country in the world; because the conditions causing it are ever present in varying degrees, and the instances of changes of all kinds and degrees due to the influence of the heat and moisture abound. We have seen the viscera of the abdomen occupying the cavity of the thorax, into which they had been thrust through a rent in the diaphragm, of whose *post-mortem* causation there could be no reasonable doubt.—*Indian Med. Gazette*, June.

POISONING BY VERATRUM ALBUM.

In an able and elaborate paper in the *New York Med. Record* Dr. Peugnet reports the following case of poisoning.

A married lady took by mistake half an ounce of the homœopathic mother tincture of veratrum album, equivalent, according to subsequent analysis, to $\frac{1}{4}$ grain. Immediately after taking it she felt soothed and quiet, having been exceedingly nervous before.

At 10 P.M. her hands and feet became numb, a sensation which gradually extended over the whole body. She attempted to rise, but had two attacks of syncope in rapid succession; was taken immediately afterwards with violent vomiting.

10.30 P.M.—I found her pulseless, heart pulsating feebly and irregularly; resp. twenty-two and regular; eyes fixed and staring; pupils dilated; almost total loss of sight; the body covered with a cold and clammy perspiration; complete anæsthesia of the skin; voice as clear and as strong as in the collapse of cholera; lips of a bright carmine; mind clear, calm, and collected; thought that she was dying; vomiting

and retching incessantly; the fluid ejected was viscid, glairy mucus, of a greenish hue. No purging. I gave her an enema of brandy and water, three ounces of each, and thirty drops of ammonia, followed in a short time by a second, both of which were retained; then rubbed her limbs with dry mustard; applied mustard plasters to the epigastrium; then administered a third enema, which was forcibly retained.

Violent purging accompanied with severe tenesmus set in shortly afterwards, and small quantities of brandy were given by the mouth at short intervals, and ammonia to the nostrils.

Aug. 5th, 1 A.M.—Pulse perceptible for the first time, 38, feeble and intermittent; anæsthesia of the skin continues; vomiting not as violent, purging incessantly, accompanied with tenesmus; can now see distinctly. 3 A.M.—Pulse 44; anæsthesia continues; temperature normal; intense thirst. 10 A.M.—Pulse 96; vomiting occasionally; salivated and bloody stools frequent; marked pain in left iliac region, extending to left hypochondrium, increased by pressure.

Aug. 6th, 6 A.M.—Pulse 100; passed a restless night; tympanitis, marked tenderness of left iliac region; nausea, vomiting at intervals; tenesmus, with bloody stools every hour; pupils normal; anæsthesia persistent; thirst intense.

Aug. 8th, 6.30 A.M.—Pulse 105; tongue dry, furred, and brown; gums inflamed and tender, bleeding freely at intervals; aphthous ulceration of the palate; breath offensive; ptyalism profuse; nausea persistent; vomiting occasionally; stools frequent and bloody; occasional exacerbation of pain in left iliac region and left hypochondrium, increased by pressure.

Aug. 10th.—Pulse 105; tongue furred; gums ulcerated; nausea, but no vomiting; purging not as frequent; stools no longer bloody; anæsthesia of the lower extremities; a profuse flow of blood from the uterus came on during the night, although the menses were not due until the 22d.

Aug. 11th.—Pulse 94; marked improvement.

Aug. 14th.—I left her, as I supposed, convalescing; she felt comparatively well, diarrhœa almost checked; occasional anæsthesia of the upper and lower extremities. On the 16th sat out of doors; on the 17th took a ride; on the 18th another; was taken that night with violent tenesmus and catharsis; stools bloody; also slight nausea.

Aug. 22d, 12.15 A.M.—Pulse 102; tongue furred and brown, edges red, papillæ raised; tympanitis, tenesmus, pain in left iliac region, extending to left hypochondrium, increased by pressure; frequent bloody stools and nausea.

Aug. 25th.—Left her improving, with directions for her removal to the city on Monday, the 28th, as I did not deem it prudent for her to re-

main longer, owing to the marked insalubrity of the place, caused by miasm and defective drainage; as there then were in the same wing of the hotel two cases of dysentery, one of which was typho-malarial. The treatment, as suggested, was the occasional administration of Squibb's liquor opii comp.

Aug. 29th.—Arrived home last night; passed an uncomfortable night; pulse 100; recurrence of diarrhœa; evacuations very offensive, black, also some mucus, streaked with blood; nausea, vomited twice viscid greenish mucus streaked with blood; tongue furred. Ordered enema of liquor ferri persulphatis, 20 drops in $\frac{3}{4}$ iv. of water every four hours, which were discontinued after the third on account of the pain and violent hysteria; five drops of the liquor were administered every four hours instead, also a pill containing argenti nitras $\frac{1}{4}$ gr. and ext. opii $\frac{1}{4}$ gr. every alternate four hours.

Sept. 2d.—Sanguineous stools having ceased, pepsine gr. iij. and bismuth trisnitrates gr. xv. were given every two hours; quiniæ sulphatis gr. ij. every fourth hour; paregoric whenever necessary to allay tenesmus.

Sept. 8th.—Pulse 84; tongue smooth and clear; pain in left iliac region, extending upwards; from fourteen to sixteen stools in twenty-four hours, dark and small, accompanied with tenesmus. Morphine sulphas $\frac{1}{8}$ gr. added to pepsine and bismuth.

Sept. 17th.—Pulse 102; tongue furred, dry and brown, edges red, papillæ raised; no improvement, as the morphine was evidently acting as a nervous irritant; discontinued it, and substituted salicine gr. v. every four hours, discontinuing all other remedies.

Sept. 22d.—Marked improvement; lying on lounge.

Sept. 25th.—Evacuations very frequent, containing mucus streaked with blood; insisted upon giving an enema of Oj. of warm water, with long flexible tube, which she had heretofore strenuously objected to. Considerable mucus, streaked with blood, came away, also shreds of mucous membrane, and but a trace of fecal matter; the pain from the distention of the intestine was intense; ordered a suppository of ext. opii aq. and argenti nitras $\frac{3}{4}$ gr. $\frac{1}{4}$ every four hours.

Sept. 26th.—Feels more comfortable; fewer evacuations; administered an enema of warm water Ojss.; it was followed by a discharge of mucus streaked with blood, shreds of mucous membrane, and but little fecal matter.

Sept. 30th.—Steadily gaining; a fourth enema administered, followed by the first well-formed and perfectly healthy evacuation, with the exception of its extreme attenuation, evidently caused by a contraction of the colon.

From this time forward the recovery was rapid: with the exception

of insomnia, nervousness, tremor of the limbs, uncertainty of gait when the first attempts to walk were made; the only nervous symptoms which manifested themselves during the progress of the case were the loss of sight, paralysis of the recti muscles of the eye, and the anæsthesia; this last symptom persisted until the middle of September, migratory in its character, recurring principally on the anterior surface of the forearm and on the thigh, following the course of the anterior crural nerves. The urine was not examined at first, but in subsequent examinations an abundance of amorphous matter with a large amount of the crystals of oxalate of lime were found.

The only remedy which effectually controlled the insomnia was the hydrate of chloral in ten-grain doses.

The digestion was so much impaired, that milk gruels, beef-tea, broths, steaks, and confections of raw beef had to be successively abandoned; game, chicken, fish, and bread being exclusively relied upon.

The emaciation, at first very great, rapidly disappeared. On the 31st of January following her health was perfect, and the fæcal evacuations had entirely recovered their natural form and size.

Wolf-Bite.—In the *Indian Med. Gazette* of April 1 is detailed a case in which the larynx of a boy was opened by a wolf taking him by the throat. Recovery.

Leopard-Bite.—In the *Indian Med. Gazette* of April 1 is detailed the case of a man who escaped from a leopard after being seized by the throat. A terrible gaping wound was left, bounded superiorly by the hyoid bone and the tissues attached to it, inferiorly by the larynx, posteriorly by the lacerated open pharynx, and laterally by the carotids, both of which escaped only by a hair's breadth. Six weeks after the reception of the injury the man was doing well, and the œsophageal opening showed a tendency to contract.

Deaths from Snake-bite.—It is stated, says the *Homeward Mail*, that in the Tanjore district, no fewer than nineteen persons in every 100,000 die annually from snake-bite. Taking the population according to the census, this would give nearly 330 deaths per annum in that district alone; and assuming the rate of mortality over the whole presidency of Madras to be only half that which prevails in the Tanjore district, and the population to be 30,000,000, we get the startling total of nearly 3,000 people annually dying from snake-bites.

Deaths from Chloroform.—On June 8 an inquest was held at King's College Hospital on the body of William Lyon, aged 36. It was considered necessary to perform an operation on the jaw, and he was placed under the influence of chloroform, and two minutes after

its administration he expired. A verdict that deceased died from paralysis of the heart, caused by chloroform, was returned.

The death of a patient while on the operating-table, under the influence of chloroform, occurred on the 27th of last month in the practice of the eminent Vienna surgeon, Billroth.—*British Medical Journal*, June 15.

Tests for Detecting Strychnia.—The *Popular Science Review* states that Dr. Filhol, in a recent paper on this subject, maintains that strychnia should, in cases of poisoning, be obtained in the solid state; the alkalinity of its solution should be ascertained, as well as its intensely bitter taste; its behavior with chlorine, and its blue coloration under the influence of sulphuric acid and oxidizing substances should also be seen; while, lastly, as a very delicate reaction, Dr. Filhol observes that with chloride of gold, strychnia (in solution) yields immediately a crystalline precipitate, which, although slowly, is yet distinctly formed in solutions containing one-tenth of a milligramme of the alkaloid. This precipitate and that formed by chlorine are at once dissolved by concentrated sulphuric acid, and chromic acid being added, the well-known blue coloration that strychnia yields with this last reagent is produced. The presence of alcohol in liquids to be tested for strychnia should be avoided.—*Lancet*, April 27, 1872.

POISONOUS COSMETICS.

Eau de Cythère: 4 per ct. chloride lead, 8 per ct. hyposulphite of soda, 88 per ct. water. (Wittstein.)

Eau de Fécs: Hyposulphite of lead, $1\frac{1}{2}$, hyposulphite of soda, 3, glycerine, 7, water, 88 parts. (Hagar and Jacobsen.)

Kalydon's and Gowland's Cosmetic Wash. Bitter almonds, 1 ounce; bichloride of mercury (corrosive sublimate), 8 grains; rosewater, 1 pound. (Dr. Ehrhardt.)

Pommade Tannique: Perfumed lard, 65, acetate of lead, 25, flowers of sulphur, 7 parts.

Damenpulver (Ladies' Powder): Pulverized talc, 4, carbonate of lead, 1 part. (J. Pohlmann, in Wien.)

Florida Water: Acetate of lead, 50, flowers of sulphur, 20, distilled water, 1,000 parts. (F. Eymæl.)

Bahama Water. According to Reveil, similar to Florida Water, but perfumed with aniseed oil.—T. M. B., in *American Chemist*, August, 1871.

Death from Quinoidine.—By C. MEYMOTT SIDY.—A laboring man by mistake took a concentrated ague mixture, containing some 170 grains of quinoidine. Immediately he was taken with excessive vomiting, and died in about half an hour. At the post-mortem, the brain was found intensely congested. The right pleura was found adherent. The lungs were in the first stage of pneumonia. The heart showed signs of fatty degeneration. The stomach was intensely congested, with patches of deeper congestion.—*London Lancet*, July 13, 1872.

MORPHIA AND ATROPIA.

At a recent meeting of the Medical Society of the Dublin College of Physicians, Dr. J. M. FINNY read a paper on a case illustrating the general physiological antagonism between atropia and morphia. The patient, a lady of nervous temperament, aged 25, was subject to neuralgia; and for this affection Dr. Finny had, on previous occasions, used a combination of atropia and morphia, with both anodyne and curative effects. When he was consulted by this lady, in October, 1871, he determined, as usual, to administer the drugs at the patient's ordinary hour of repose. Instead of the usual dose of one-fiftieth of a grain of sulphate of atropia, at least double that quantity was injected hypodermically, in combination with a fourth of a grain of acetate of morphia. In about twenty minutes Dr. Finny found the patient complaining of great cold, with the tongue dried, parched, and rough; dryness of the throat; speech thick and inarticulate; dimness of vision; scintillation; the pupils much dilated; pulse small and rapid, 130; respirations shallow, 32. Ten minutes afterward these symptoms had increased; there were great uneasiness and tossing about; delirium had also set in; the patient was grasping at imaginary objects in the air. Dr. Finny now resolved on using morphia as an antidote. With much difficulty, owing to the patient's perturbed state, he injected one-third of a grain of the acetate. In less than five minutes the restlessness and jactitation ceased, the skin became warm, respiration fell to 20, and the pulse came down below 100, and was fuller. In ten minutes from the time of the injection deep sleep had set in, and this continued through the night. Next day the lady had quite recovered, except for the still existent dilation of the pupils. The author then detailed the opinions of Dr. John Harley, Mr. Benjamin Bell, and others, on the subject of the antagonism between atropia and morphia, and of the toxical doses and effects of the former. Dr. MacSwiney said that at 3.30 p.m., on the 14th of last February, thirty minims of liquor atropiæ had been given to a man, aged 40, in mistake for the same quantity of Battley's solution of opium. At 4 p.m. an emetic, which had been administered, acted, and stimulant treatment was com-

menced. At 7 P.M. the man was quite insensible, anæsthetic, with eyes open and pupils enormously dilated; pulse very rapid and small; respiration slow; surface cold, and bathed in clammy perspiration. Thirty minims of liquor morphinæ hydrochloratis were now given, and the dose was repeated until three drachms in all of the solution had been taken. Consciousness returned at midnight, when the patient complained that he could not see. He recovered perfectly. Dr. Hayden reported a case of poisoning by belladonna-berries in a boy. The leading symptoms were vomiting, unmeaning laughter, and strange staggering gait. Dover's powder was given, and the patient recovered; but the pupils did not resume their normal appearance for two or three days. Dr. Hawtrey Benson, in November, 1869, treated a child aged 4, for toxic symptoms, consequent on eating belladonna-berries. The little patient was quite insensible, with jactitation and floccillation. The face was flushed, the pupils were dilated, and dysphagia and thirst were present. Control over the bladder, also, was lost. The treatment was by tincture of opium given in three-minim doses every second hour. This child completely recovered, having taken fifty-four minims of laudanum within thirty-six hours.—*Med. and Surg. Rep.*

THE LOGWOOD TEST FOR ALUM IN BREAD.

BY JOHN HORSLEY, F.C.S.

MR. DAVIS having, at the conclusion of his paper (*Chemical News*, vol. xxv., p. 207), invited chemists to give their experience on this subject, I yield to his request, inasmuch as, from having used logwood for several years past, I am in a position to speak of its being *perfectly reliable* if used precisely in the manner I am about to describe. I have on former occasions contributed papers to the *Chemical News* relative to the detection of alum in bread by the incineration process, but as such analyses occupy a much longer time than is required by law to give notice of proceeding against a baker for adulteration, I was necessitated to search for a short, and at the same time reliable, one. Knowing well that Mr. Hadow's system of using a decoction of logwood was *per se* of little or no value, as iron, copper, and other things produced a similar reaction, it occurred to me to use a tincture of logwood together with a saturated solution of carbonate of ammonia; and after making a variety of experiments with loaves purposely adulterated with different materials, I found that iron was the only substance that clashed with alum in its results, but that even these, when mixed, could easily be distinguished by proper procedure.

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Feeling so thoroughly satisfied with this compound test, I placed it in the hands of the police, and with their assistance I surveyed the whole of the county of Gloucester twice, visiting the different bakers' and millers' establishments, and have therefore had some thousand of loaves pass through my hands, and succeeded in obtaining upward of 200 convictions which it would have been impossible to have done by the incineration process, forty-eight hours being the time allowed to take proceedings in.

At Dr. Carter Moffat's request, I sent him a sample of this aluminized flour, and was surprised afterward to find him stating in his lecture at Glasgow that alum and logwood gave a *dark red*, hence my letter in the *Chemical News* of September 15, 1871 (vol. xxiv., p. 131), which Mr. Davis now alludes to. I therefore distinctly state, that bread containing alum will, in every case, on being treated with logwood in solution, ultimately go blue, it being merely a question of time, although it may take a straw-colored tinge at first; in conjunction, however, with carbonate of ammonia, the blue color is more rapidly promoted, which is the beauty of that combination.

As my process was explained and published in the newspapers at the time, perhaps Mr. Davis and others may not have seen it. I therefore now describe it in full:

1. Make a tincture of logwood by digesting for eight hours two drachms of freshly-cut logwood chips in five ozs. of methylated spirit in a wide-mouthed phial, and filter.

2. Make a saturated solution of carbonate of ammonia in distilled water.

A teaspoonful of each solution, mixed with a wine-glassful of water in a white-ware dish, forms a pink-colored liquid. Bread containing alum, immersed in it for five minutes or so, and stood upon a plate to drain, will in an hour or two go blue on drying; but, if no alum is present, the pink color fades away. If, on drying, a greenish tinge appears, that is an indication of copper, as carbonate of ammonia produces that color, but never a blue.

As a counter-check for iron, a piece of the moist blue-colored bread may be drenched with a few drops of glacial acetic acid, when that containing iron is bleached of a dirty white color, but with alum a rose-pink or slight buff color will be observed.

Or it may be tried another way, thus:—Take a piece of the bread in its plain state, and having digested it in dilute acetic acid for an hour or so, press out the liquor and filter; then put in a lump of carbonate of ammonia, and, when all effervescence ceases, add to the clear liquor a few drops of solution of sulphide of potassium or sodium. If iron be present it will be indicated by a dark color, there being no

color produced with alum; but the addition of a little tincture of logwood immediately reveals it.

I might even go further, and say, that if necessary, you may quantitatively estimate the alumina thus: Take, say, $\frac{1}{4}$ lb. of crumb bread, digest it in a clean basin with some dilute acetic acid, and allow it to stand a few hours; then break up the mass and pass the liquid through a glass percolator, the rim being covered with calico, repeating the percolation two or three times till the liquor is clear. Throw in a lump of carbonate of ammonia to saturation, and add tincture of logwood in excess, when, if alum be present, a dark blue color will be produced, with a flocculent blue precipitate on standing awhile. Collect this precipitate on a filter, wash it off into a dish with dilute nitric acid, and evaporate the red liquor to dryness. Collect the residue in a small Berlin crucible and ignite it at a red heat, when a white powder will be obtained consisting of alumina, with possibly a little lime; treat this with liquor potassæ, to dissolve out the alumina, mix with a little water, filter, and boil with carbonate of ammonia to obtain the pure alumina.—*Chemical News*.

A CASE OF NITRO-GLYCERINE POISONING.

BY DR. J. C. HOLST.

A MAN thirty years old drank by mistake some impure nitro-glycerine, and directly afterward took milk and water, and at once sought medical aid. The symptoms were not very marked, and consisted in slight sense of pressure on the chest, a somewhat excited pulse, and hurried breathing; there was also some giddiness. After the exhibition of an emetic the patient vomited a liquid smelling strongly of nitro-glycerine. Afterward the respiration became very fast, 100 a minute; the pulse 96, otherwise normal; a sense of weight in the pit of the stomach was complained of, as well as a feeling of uneasiness; consciousness was not disturbed save for an instant; no pain was present nor thirst, nor were there any mucous râles in the lungs. Leeches were placed upon the temples and præcordia. About five hours after the ingestion of the poison, vomiting and diarrhœa came on; the latter was painful and lasted uninterruptedly for an hour. The vomit smelt of nitro-glycerine. The stools were first greenish, afterward whitish, with a trace of nitro-glycerine.

Afterward the feelings were better, the intense abdominal pain disappeared, but headache was complained of. The breathing was less hurried, but very superficial, yet after every two or three respirations

would come a deeper one. The man laid as though quietly asleep, but the stupor and cyanosis grew more and more profound, and the patient died quietly seven hours after the taking of the poison.

Five hours after death the rigidity was marked. Congestion of the membranes and outer brain substance, and of the lungs, were found at the post-mortem. The tracheal mucous membrane was reddish brown. The left ventricle contained fluid blood; the right was empty. The mucous membrane of the stomach was reddish brown, much swollen and somewhat ecchymosed. The intestines were normal.—*Norsk. Mag.*, xxiv., 1870, and *Schmidt's Jahrb.*, August, 1872.

A NEW TEST FOR ARSENIC.

BETTENDORFF has simplified Hager's method of testing for this substance, and, it would seem, has rendered it peculiarly suitable for testing pharmaceutical preparations for slight impurities from this element.

The method of testing commercial sulphuric acid for traces of arsenic will give a fair illustration of the author's process.

A small quantity of protochloride of tin, in a shallow dish, is covered with pure hydrochloric acid (1.12 sp. gr.) until it is dissolved. To this is added, drop by drop, the sulphuric acid to be treated, the vessel being agitated at each addition. This addition will cause considerable heating, and if no arsenic be present the liquid will remain clear. If the arsenic be present in the smallest quantities, the liquid will be colored first yellow, then brown, and finally a dark grayish-brown, becoming at the same time turbid.

The process, while far more readily carried out than Marsh's, is declared to be nearly equal to it in delicacy.—*Journal Franklin Institute*.

Trichinæ.—The Prussian Government publicly calls attention to the presence of trichinæ in hams imported *via* Bremen from the United States, warning purchasers to abstain from them, and threatening the sellers with criminal proceedings.—*Med. and Surg. Reporter*.

DEATH AFTER TAKING HYDRATE OF CHLORAL.

F. JOLLY (*Bayer. Erztl. Intell.-Blatt*, 1872, Nos. 13 and 14) states that in the course of two years, during which he has employed hydrate

of chloral in the treatment of the insane, he had met with two cases of sudden death following its use. The dose was in each case below the average, and the chloral was chemically pure. The patients during life presented no contra-indications to the use of the remedy. One had taken the chloral at night for four evenings in succession; on the fifth evening, after taking it, the respiration and circulation at once ceased. The necropsy showed anæmia of the brain, acute cedema of the lungs, hyperæmia of the abdominal organs, a perfectly healthy heart and vessels, and dark fluid blood. In the other case, chloral had been given twelve days in succession, with the effect of producing sleep after a short stage of excitement. On the thirteenth day the patient died, after some stertorous breathing, a quarter of an hour after the dose. There was here found moderate cedema of the lungs; the blood was fluid, but normally distributed; the heart was large and flabby, and its muscular structure was pale, but not friable.—*Med. and Surg. Reporter*.

DEATH FROM THE STING OF A BEE.

On the 19th of July, a female, age fifty-five, was stung by a bee behind the ear. Shortly afterwards she became unconscious, and died before the doctor who was sent for arrived. The brother of the deceased stated at the inquest that she was of a delicate and nervous constitution. In the autumn of 1870 she was stung by a bee, and the consequences were very peculiar. She became unconscious, and remained in that state for two hours. Beck, in his work on Medical Jurisprudence, quotes a case where a sting on the back of the finger was quickly followed by "vomiting, sweating, trembling, and great difficulty of breathing."

Dr. Tanner quotes a case from the *American Journal of the Medical Sciences*, of a man who suffered very seriously in the month of August, 1819, from the single sting of a bee, and who being stung a second time (on the temple) in the following year, died from the effects thereof within ten minutes. Two or three other cases of fatal result are quoted by the same author, but happily such an occurrence is exceedingly rare. The advice given by the coroner, Dr. Diplock, to "give stimulants freely" in such cases, is undoubtedly founded on sound principles, the immediate cause of death being apparently failure of the heart's action.—*Lancet*, July 27, 1872.

POISONING BY ACETATE OF BARYTA.

In *L'Union Médicale* of October 5, Dr. Lagarde describes the case of a man for whom he had ordered a dose of sulphovinate of soda, but to whom was administered, by mistake, acetate of baryta, in the quantity of between two and three drachms. When summoned to his patient he found him very pale; voluntary motion was almost completely abolished, with nearly suppressed voice, cold, very wet skin, irregular and feeble respiration, almost without murmur, and a feeble, small pulse of 125 to 130 per minute. The tongue was a little blackish, but preserved its movements; there had been efforts at vomiting, and there was nausea; the urine was clear and abundant; the stools involuntary; the pupils normal; the face anxious and the mind clear to the close.

In spite of treatment the man died of gradual asphyxia from paralysis of the respiratory muscles, without having moved in the slightest from the position in which the doctor found him. At the autopsy nothing definite was found, unless it were a dark fluid state of the blood.

Before the fact of poisoning was recognized, the doctor tasted the remainder of the potion freely.

Three or four hours afterward he was seized with an intense general feebleness, with disagreeable feelings of formication, etc., under the skin, especially of the face. After about two hours he had marked borborygmus and a semi-liquid stool. About an hour after this the weakness had so increased that he could scarcely raise his hand to his head. His pulse was 65 (5 below normal), the skin cold, the general sensibility intact, but the peculiar pricklings about the head were increased.

About seven hours after the ingestion of the poison he had some nausea, followed by very copious vomiting. At the eighth hour there was complete paralysis of the left forearm, and at the ninth hour almost as complete relaxation of all four members as possible, and he had again some vomiting, a semblance of which indeed occurred nearly every hour during the night. From this time the paralysis rapidly gained upon all the muscles, and finally respiration became very much affected. The doctor was unable to cough, to articulate a word of more than two syllables, and at last the sphincters became involved, and involuntary passages occurred. The pulse fell to 56, but fortunately only for a short time was irregular. The temperature was lowered, but intelligence and consciousness were not affected. The paralysis persisted for twenty-four hours, and then gradually disappeared, voluntary motion returning first in those extremities in which it had first disappeared.

There was not at any time abdominal pain, but for forty-eight hours there was intense thirst. For the same period of time after recovering, the urine contained a large amount of mucus in it, but an analysis failed to detect baryta on the thorax. There was an eruption of acne, which disappeared after some days.

THE CHEMICAL CHARACTERS BY WHICH THE MEDICO-LEGAL EXPERTS CAN RECOGNIZE DIGITALINE.

In *L'Union Médicale* for August 22, 1872, Messrs. E. & G. Homolle, after quoting the opinion of Tardieu, that it is not possible to find digitaline in cases of poisoning, affirm that they think it can be done. The first step should be to purify the matters to be examined by maceration, first in strong alcohol (95 per cent.), afterward in chloroform, the remaining steps being confined to the substances dissolved out by these menstrua. The presence of a bitter taste is of some import, but no attempt should be made to recover the digitaline in substance, as its physical characters are not distinctive, and much of it is necessarily lost during the requisite process.

The absence of a precipitate with the chloride of platinum, shows that no alkaloid is present in the bitter liquids. The emerald green color produced by contact with concentrated pure hydrochloric acid is distinctive. It has been objected that the same color is produced by bile and chlorophyll. We have, however, tested a vegetable extract to which digitaline had been added, and got the color; then tested another portion of the same extract without the addition of the digitaline, and failed to develop the color.

If pure beef bile be treated with alcohol 15 per cent., the liquid agitated with hydrated oxide of lead, filtered, and evaporated to an extract, this treated with chloroform, and the solution allowed to evaporate, the residue does not turn green with hydrochloric acid.

The best method of performing the testing for digitaline is as follows: A portion of the product obtained for testing is put in a small capsule of porcelain, and to it are added, by means of a glass rod, two or three drops of the strong acid, and the mixture slightly heated. The green color rapidly develops, but, when there is only a small portion of the digitaline, does not persist more than 24 hours. When the expert desires to preserve the color, he may do so by dissolving the green matter in a drop of chloroform. When this evaporates, a permanent green is left.

The reactions produced with iodine, bromine, and chlorine are very characteristic, but require a considerable amount of the digitaline. These tests should be applied in the following order:

1st. Intense bitter taste.

2d. Hydrochloric acid.

3d. If the quantity be sufficient the sulphuric acid, tannic acid, the chlorine and bromine tests, may be used.

The hydrochloric acid test with digitaline we believe to be infallible.

In a doubtful case of poisoning, the method of Stas should be employed to discover the alkaloids, etc., with the bulk of the matters vomited, stomach contents, etc. A moiety of the material should be preserved for the looking-for of digitaline. If the symptoms have been very significant of poisoning with the latter substance, the bulk of the material should be examined for it. The process should be conducted as follows: The material should be filtered. The liquid portion should be triturated with fresh hydrated oxide of lead (1 to 20 by weight); then to it should be added its volume of alcohol of 95 per cent., filtered and evaporated at a low temperature; when, during evaporation, albuminous or fatty flakes form, they should be separated by passing through a filter previously moistened with distilled water. When the liquid has become of a syrupy consistence, it should be put into a test-glass and agitated with less than its volume of chloroform, which should afterwards be separated by a pipette. This may be repeated several times, and the chloroform be allowed to evaporate in a porcelain capsule. If fatty matters appear to be present in the residue, they should be removed by benzine, which does not dissolve at all the digitaline.

The solid material remaining on the original filter, and the viscera cut fine, should be treated as follows: Its weight of alcohol (at 95 per cent.) should be added to the mass. After many hours of contact, the liquid is to be decanted and replaced by fresh alcohol; this is repeated three times. The alcoholic products are then united, agitated with hydrate of lead, filtered and evaporated at a low temperature (never above 40° C.). The residue, of the consistence of honey, must be carefully washed with benzine, and then treated with alcohol of 95 per cent., which leaves much of it behind. The solution thus obtained is to be evaporated as before to a syrupy consistence, and then shaken in a test-glass with chloroform, from which an extract is obtained, as in the examination of the liquid contents. This extract should be washed with very pure ether and distilled water.

The reasons for the various steps of this process are discussed by the authors, but are sufficiently obvious.

TOXICOLOGY.

THE EXISTENCE OF NICOTINE IN TOBACCO-SMOKE.

DR. EMIL HEUBEL has made an investigation of the above subject in Rosenthal's laboratory. By means of aspirateurs the tobacco-smoke was first drawn through a Liebig's condenser, the condensed liquid being caught in a glass vessel, and then through vessels containing distilled water, alcohol, dilute sulphuric acid, and, in some experiments, solution of potash. The smoke was by this process reduced to about half the original volume. The first liquid was in very small quantity, brownish, with a strong, disagreeable odor, sharp taste, and strongly alkaline reaction. Upon its surface was an oily layer. The water and alcohol acquired a similar but lighter brown color and alkaline reaction. The dilute sulphuric acid acquired a dirty cherry-red color.

With these preparations Heubel produced all the characteristic symptoms of nicotine-poisoning in frogs and warm-blooded animals. The strength of the preparations was different. The strongest was the liquid obtained by condensation. Nicotine therefore passes over with tobacco smoke and in considerable quantity, because the first liquid obtained from the burning of a single cigar was enough to kill a large frog.

The next question was to reconcile these results with the well-known fact that nicotine is rapidly decomposed by moderately high temperatures. Heubel found that if a 4-5 per cent. nicotine solution was placed in a water-bath and evaporated to dryness, the residue treated with water possessed no physiological properties. If, however, a salt of nicotine were similarly treated, the residue was found to have preserved all its properties. Entirely similar in its action was the liquid obtained by the condensation of the tobacco-smoke. It could be evaporated to a thick syrupy consistence or even to dryness upon the water-bath without losing its properties.—*Schmidt's Jahrbücher*, Band 156.

DETECTION OF BLOOD-STAINS.

DR. EDWARD S. WOOD reports that *Fres. Zeitsch. f. Anal. Chem.* (1872, ii. p. 244) contains a note from Dr. Helwig, contradicting a

statement made in the *Chem. Centralb.*, 1871, p. 37, that a solution of blood-pigment in iodide of potassium cannot be used for the production of blood-crystals, but only for spectroscopic examinations. It has long been known that a solution of iodide of potassium will extract from clothing the slightest trace of blood coloring matter, it being possible to obtain a solution suitable for testing even when the clothing has been washed and the stain is very old. In the present instance Dr. Helwig exhibited a specimen of hæmin-crystals which he had obtained by treating a piece of linen upon which a blood-stain had existed for 16 years, with a solution of iodide of potassium. The residue left after the evaporation of one drop upon a glass slide gave beautiful hæmin-crystals upon the application of Teichmann's test, when the remainder of the solution, examined by the spectroscope, gave an absolutely negative result.

Teichmann's test, the ordinary test for hæmin-crystals, is performed by rubbing upon the dried residue in a watch-glass, or on a microscope slide, a very small quantity of ammoniac chloride or of common salt, adding to the mixture a drop of glacial acetic acid, and warming until bubbles form under the covering glass, showing that the boiling-point of the acetic acid has been reached. Upon cooling, crystals of hæmin can be detected by the microscope.

In the same journal (1872, i. p. 29) we find mentioned by H. Struve an additional test for blood-pigment, which is applicable to the testing of both urine and clothing-stains for blood. This test is based upon the precipitation of hæmatin from an acetic acid solution by tannic acid as tannate of hæmatin, and may be performed in the following way. To the urine or any other liquid suspected to contain hæmatin is added a little ammonia-water or potassic hydrate, then a solution of tannic acid, and finally acetic acid, to distinctly acid reaction. If hæmatin be present, a reddish-brown precipitate, tannate of hæmatin, is formed, which quickly settles, and can be very easily washed and collected on a filter. This precipitate, after drying, gives a residue with which we can obtain hæmin-crystals by performing Teichmann's test. This test is far superior to Heller's test for blood in the urine, in which the hæmatin is mechanically carried down with the earthy phosphates, after the addition of ammoniac or potassic hydrate. By the above method the author claims to have detected the presence of blood when all other reactions have failed: for instance, in urine when he could not detect the albumen by any of the ordinary tests. In 20 cc. of urine to which 0.023 per cent. of blood was added, a precipitate was obtained which permitted numerous examinations for hæmin-crystals to be made by Teichmann's test.

The same author (*Fres. Zeitsch.*, 1872, ii. p. 150) states that he has

separated from the blood two new coloring matters. One is soluble in alcohol and water, difficultly soluble in ether, and forms, when dry, a dark greenish-brown mass, which chars without puffing up, and, after ignition, leaves a residue, consisting of oxide of iron, phosphoric acid, and silica. It is precipitated from its solution in water by acids, and the application of Teichmann's test does not yield hæmin-crystals. The other pigment separates in the form of dark bluish-black microscopic crystals, reminding one of indigo. These crystals are insoluble in water, alcohol, ether, chloroform, and acids, but are soluble in alkalies with the production of a dark-brown solution. If precipitated from the alkaline solution by acetic acid, and the precipitate subjected to Teichmann's test, the result is the most beautiful hæmin-crystals. Concentrated sulphuric and nitric acids dissolve this pigment with a greenish-yellow color, concentrated hydrochloric acid and aqua regia decompose it, and glacial acetic acid is without action upon it, unless ammoniac chloride has been previously added, in which case it dissolves it, forming a dark-brown solution, which, upon evaporation, yields large pure hæmin-crystals. After ignition, the residue consists of pure oxide of iron. These crystals he considers to be identical with Virchow's hæmatoidon. An elementary analysis of these pigments is promised.—*Boston Med. and Surg. Journ.*, Jan. 2, 1873.

Chloral Hydrate to Restore Blood-Corpuscles.—Prof. Filippo Pacini prepares suspected blood-stains for the microscope by immersing the matter in a solution of chloral hydrate (one part to ten of water). The corpuscles are softened without disintegration.—*Nuova Liguria Medica*.—*New York Medical Journal*, Jan. 1873.

ETHER-DRINKING IN NORTH OF IRELAND.

MR. MORGAN said he had taken the trouble of obtaining a letter from a gentleman in a northern town, which was the head-quarters of ether-drinking in the North, and he would read it to the Society:—

“‘Ether’ drinking is of very old date in this locality, even so far back as the time of Father Matthew’s temperance movement, nearly a quarter of a century ago. It began then as a substitute for a more potent spirit, and from small beginnings it soon reached a very large consumption; in fact, becoming the general drink of the whole country. At first it was sold by one or two who kept shops for dispensing drugs, and were considered medical men, and after a little it was sold by almost all the shops in this town. One of those who first estab-

lished its use here is still living, and on speaking to him the other day he told me that at first the quantum taken was small, but very quickly it turned to more common use, and that he has known young men to come into his shop, and before they left, in a few hours to have drunk not less than six or seven ounces (I mean each person drank as much). Some would get over its effects very soon, owing to its volatility, it acting mostly as a carminative, and was, to use their own words, belched from the stomach; the others on whom it had not such effect would remain a long time in a stupid state, *but as yet none have suffered or died from the use of it*. He alone generally sold from nine to ten pounds of ether in the week. There were, I may say, at least a dozen others selling it."

In answer to my inquiries as to the effects of ether intoxication, or any bad results, the gentleman writes:—

"I have never known any ill effects, and I do not consider it as injurious as whiskey-drinking, neither, indeed, is it injurious at all to the general health. For upwards of twenty years I have known many tolerable consumers of ether, and they seem as well as ever; some of them would occasionally take so much as six, seven, or even eight ounces in the course of the day or night, but not as a constancy, taking whiskey too. It is now sold in the public houses, and is more drunk by young bold women to act as a carminative or stimulant; very few of the male population confine themselves to ether alone. They seldom use water in the drinking of ether, and one young man assured me that he was in the habit of taking a wineglassful at a draught without any inconvenience.

"There is no doubt that although ether leaves no permanent injurious effect on the health, still at the time it renders the drinker of any large quantity perfectly stupid and unconscious, more so, I should say, than when whiskey is used."—*The Doctor*.

BITE OF THE VIPER.

THE *Gazette des Hôp.*, 12th and 24th of September, mentions several cases of bite of vipers. A man, æt. 47, was bitten on the 12th of April; three-quarters of an hour afterwards the physician found the patient pale and covered with cold sweat, with thirst and vomiting, but there was as yet no swelling. An incision was made to enlarge the bite, and the wife of the wounded man sucked the wound vigorously. An ammoniacal potion was recommended. The patient's strength went on becoming feebler, and five hours after the accident the patient felt the extremities becoming cold, vomiting occurred

and a rather severe hemorrhage supervened from the bowels and bladder. It was impossible to arouse the powers of the patient, and he succumbed in two hours. Death in such cases, says Dr. Fridet, of Clermont-Ferraud, is rare. Generally, swelling, lividity, and brown stains appear on the wounded limb, and are accompanied by loss of strength, nausea, and coldness of the extremities. In general, he says, these alarming symptoms leave in a few days, and the patient is restored to health. M. Delasiauve has noted, in one case, extreme retardation of the pulse to twenty-eight pulsations, and swelling of the tongue. M. Fridet thinks that the accidents are in proportion to the quantity of venom, and some experiments made in Beaujon hospital confirm this method of viewing the matter.

The non-coagulability of the fibrine from the fluid nature of the blood, explains the petechial stains and hemorrhages which are seen in men and also in animals when experimented on. We ought at once to cauterize rapidly with volatile alkali when the bite takes place, or use a red-hot iron. In one case Dr. Delasiauve placed setons, in order to see the bite well and cauterize energetically.—*The Doctor*.

ABSINTHE.

THE *liqueur*, *extract*, or *cream* of absinthe can be made from all the varieties of absinthe officinale, but those known as *absinthe romaine*, *little absinthe*, *absinthe pontique*, and above all *absinthe Suisse*, are preferred; the last is the most bitter and aromatic. The best liqueur is manufactured in the little town of Couvet, in Switzerland, and at Pontarlier, in France. The proportion of alcohol in this liqueur is considerable, since it marks 27° at least on the alcoholometer; its savor is strong, very aromatic, but not at all bitter. Workmen drink *absinthe verte*, or *absinthe blanche*, liqueurs of inferior quality, much less alcoholic, and much less mischievous. Absinthe is adulterated with angelica, spinach leaves, nettles, and sulphate of copper occasionally. It has only been in use as a liqueur for the last thirty years. The extract of absinthe, a common apothecary's drug, was extensively used in Africa against dysentery in the camps. The bibulous ne'er-dowells of the African legions (*deux ans d'Afrique* is a severe military punishment) acquired a liking for the medicine, and an officer of Marshal Bugeaud's staff introduced it as a liqueur into Parisian *cafés*, making a great fortune by the innovation, it is said.—*Food Journal*, Jan. 1873.

ANTIDOTES FOR PHOSPHORUS.

G. H. ROESSINGLE has been making experiments with copper and turpentine as antidotes for phosphorus, and arrives at the following conclusions:—

1. The assertions of Bamberger that oil of turpentine is not antidotal to phosphorus are not correct.
2. All the rabbits treated with the oil of turpentine lived longer than those in which a copper salt was used.
3. The dose of phosphorus which could be supported was far larger with the oil of turpentine than with the salt of copper.
4. The temperature never ran so high when the turpentine was used as when the copper was.
5. During period of the high temperature the animals lost weight more rapidly when copper was used than when turpentine was employed. From these conclusions, based on numerous experiments, Roessingle decides in favor of oil of turpentine as the best known antidote for phosphorus.

Mahaux details (*Presse Med.*, No. 12, 1872) two cases of phosphorus poisoning treated with oil of turpentine successfully; in one the dose of phosphorus is said to have been large. Prof. Crocy, of Brussels, (*ibid.*), reports a case treated with large amounts of lime-water without success. Vito Giuseppe de Marco also reports (*Il Morgazin*, xiv. 3-4, p. 217, 1872) a case which recovered under the use of turpentine.—*Schmidt's Jahrbücher*, Dec. 16, 1872.

AMMONIA IN SNAKE-BITE.

On the morning of Aug. 6th, 1872, Wm. R., Jr., colored, in getting out of his bed, which he occupied in common with his father and *their* wife, in their little hut at the foot of the mountain, was bitten by a snake—a rattlesnake or copperhead—was not certain which. Dr. Thos. A. Elder, who saw him first about 5 p. m., after he had previously taken about a half-pint of whiskey without perceptible effect, says:—His hand and arm were swollen to such a degree that one would suppose the skin must burst; the skin seemed thick and hard like heavy leather; the pulse was small, weak, rapid, about 130, and very irregular; the breathing labored; the arm very painful; he was weak and faint. I injected with the hypodermic syringe, ℥xv. of a solution composed of equal parts of aq. ammon. and aquæ puræ, into the neighborhood of the bite, and ℥x. into the well arm. Within twenty min-

utes it showed its effect. He could feel it going all through him, especially at the point of injection. The pulse came down to about 80, doubled in strength, and became regular. Within an hour, the pulse growing somewhat more rapid, and weaker, I injected ℥x. more into the well arm, and at the same time, the same quantity into the affected arm. I ordered him $\text{spts. ammon. arom., dr. j,}$ in water every third hour. He then started on his homeward journey, and succeeded in going a mile, when he had to lie by for the night, being too weak to go farther. The next morning I saw him at the house in which he had spent the night. I found him in very much the same condition in which he was when he came to me the day before. The arm had become painful again, the pulse rapid and weak. I injected him again twice, in all about ℥xx. of the above solution, and with the same result.—*Chicago Medical Journal*, Dec., 1872.

AMMONIA IN SUSPENDED ANIMATION.

THE value of the injection of ammonia, as recommended by Professor Halford, in cases of snake-bite and suspended animation, has been again demonstrated. A lady in Melbourne recently swallowed by accident an ounce of Browne's chlorodyne, which is a mixture of chloroform, morphia and prussic acid. When seen by her medical attendant, she was, as he imagined, on the point of death, cold, insensible to everything, and giving only occasional gasps as signs of breathing. Recollecting a former case, in which a young man who had taken chloroform was revived after death had apparently occurred, the doctor mixed half a drachm of the liq. ammon. fort. with one and a half of water, and within the space of one minute injected the whole into a vein of the arm. In a few minutes the pulse returned, the breathing became natural, and in twenty minutes the whole body had regained its natural warmth; but perfect consciousness did not return for some hours afterwards. The patient made a rapid recovery. Two further instances have been reported in which the timely use of the injection saved the victims of snake-bites from the death which threatened them.—*Melbourne Argus*.

Formation of Corrosive Sublimate in Powders containing Calomel.—G. Vulpius has been examining this subject, and finds that when calomel is mixed in powder with white sugar, or calcined magnesia, or hydrated carbonate of magnesia, or bicarbonate of soda, corrosive sublimate is formed in twenty-four hours. Rather large quantities are formed in powders composed of calomel, white sugar, and

bicarbonate of soda. None is formed when a powder consisting of calomel and bicarbonate of soda is digested with water containing hydrochloric acid. Pepsin does not favor the formation of corrosive sublimate.—*Chemical News*, Nov. 1, 1872.

Lead Poisoning in a Child Eight Days Old.—Doctor Bouchut was called to see the infant, which was healthy in appearance, but suffered day and night with a frightful colic, and finally died. After its death, it was discovered that the mother was using for her cracked nipples a quack salve, which contains very largely of acetate of lead.

Tests for Ammonia.—R. Böttger says that by the chloride of mercury in solution the $\frac{1}{100000}$ part of ammonia or its base can be recognized, and that by it ordinary illuminating gas can be shown to contain ammonia.—*Zeitschrift des Oester. Apothek. Vereins*, Jan. 20, 1873.

A NEW TEST FOR ARSENIC.

BETTENDORFF has simplified Hager's method of testing for this substance, and, it would seem, has rendered it peculiarly suitable for testing pharmaceutical preparations for slight impurities from this element.

The method of testing commercial sulphuric acid for traces of arsenic will give a fair illustration of the author's process.

A small quantity of protochloride of tin, in a shallow dish, is covered with pure hydrochloric acid (1.12 sp. gr.) until it is dissolved. To this is added, drop by drop, the sulphuric acid to be tested, the vessel being agitated at each addition. This addition will cause considerable heating, and if no arsenic is present the liquid will remain clear. If the arsenic is present in the smallest quantities, the liquid will be colored first yellow, then brown, and finally a dark grayish-brown, becoming at the same time turbid.

The process, while far more readily carried out than Marsh's, is declared to be nearly equal to it in delicacy.—*Journal Franklin Institute*.

Trichinæ.—The Prussian Government publicly calls attention to the presence of trichinæ in hams imported via Bremen from the United States, warning purchasers to abstain from them, and threatening the sellers with criminal proceedings.—*Med. and Surg. Reporter*.

LACERATIONS PRODUCED BY A LION; DEATH IN 48 HOURS FROM TRAUMATIC GANGRENE.

DR. JOHN ASHHURST, Jr., reported the following case : J. W., aged 25, a professional lion-tamer, engaged with a menagerie now exhibiting in the outskirts of the city, was rehearsing his part on the afternoon of Tuesday, April 2, 1872, and had placed his head in the lion's mouth, when the animal unexpectedly closed his jaws ; the by-standers rushed to the rescue, and with clubs and iron bars forced the wild beast to loose his hold, when, had his victim made his escape, he would have got off with moderately severe lacerations of the face ; unhappily, however, either falling in the cage, or, as other accounts have represented, voluntarily returning with a mad determination to obtain the mastery, the unfortunate man again came within the lion's grasp, was quickly struck down, and the monster's jaws again closed, this time upon the fleshy part of the victim's right thigh. Again the wild beast was driven off, and his conquered conqueror was dragged from the cage, bleeding profusely, and seeming more dead than alive. This was about four o'clock in the afternoon, and the wounded man was taken to a neighboring tavern, from which he was brought, a little before midnight, to the Episcopal Hospital. When admitted, the patient was in a state of profound shock ; there were several lacerations about the lower part of the face and chin, the largest wound having laid open the right cheek into the mouth, while on either side of the right thigh were numerous irregular and jagged openings, varying in length from a few lines to two inches, or even more ; these wounds appeared to be of great depth, the muscles of the limb having been evidently torn up and mangled in a frightful manner, though the bone, and, as far as could be ascertained, the femoral artery, seemed to have escaped injury.

I did not see the patient until about 2 P.M., April 3, when I found him in a manifestly hopeless condition. His pulse was extremely feeble and running at the rate of 172 beats to the minute, his respirations being about 40 in the minute, while his injured thigh was enormously swollen, emphysematous and crackling from the gaseous products of decomposition, and discharging profusely from its various wounds a bloody, sanious, and very offensive fluid ; it was, in fact, in that condition known to surgical writers as true "traumatic or spreading gangrene." This condition had come on during the night (as I am

informed by Dr. Simes, the house-surgeon), and therefore in less than eighteen hours from the time of the patient's injury.

I saw the patient again the next day, when he was evidently moribund; there was no pulse at the right wrist, and that on the left was barely perceptible; the right leg, below the knee, was now white, cold, and corpse-like, while the thigh was swollen almost to bursting, black in parts, with the muscles protruding through the wounds, and exhaling a most offensive smell; the discoloration of impending gangrene had already reached the buttock. While thus fully a quarter of the patient's body was literally dead and decomposing, his consciousness was perfect, and his mind clear when he was spoken to, though he occasionally wandered off in delirium when left to himself. He complained of almost no pain, only a little, he said, about the feet. He died two hours afterwards, just forty-eight hours from the time of his injury. No autopsy could be obtained.—*Transactions of the Philadelphia College of Physicians*, Vol. IV., No. 9.

Death from the Inhalation of Ether.—The patient, aged 20, feeble from chronic spinal disease, was anæsthetized for the performance of tenotomy. Dr. D. W. Hand, who reports the case (*North-western Medical Journal*, March, 1873), says: "The best sulphuric ether, made by Powers & Weightman, was used, and administered by myself, in the presence of Drs. J. H. Stewart, C. E. Smith, and H. C. Hand, and Messrs. Horst and Davenport, medical students. A towel was folded into a cone, and this covered by a newspaper, the ether being poured into the cone, about two drachms to a half an ounce at a time, and then held lightly over the nose and mouth. The inhalation began at 3.15 P.M., and in about twenty minutes he came quietly under the influence of the anæsthetic without anything unusual being noticed, except that the pulse was rapid, from 120 to 140."

After describing the operation, Dr. Hand continues as follows: "While Dr. H. was about finishing the operation by cutting the pectinei, the patient vomited freely, and immediately thereafter became very pale, with weak pulse and copious perspiration. It should here be noted that the blood which escaped from the first punctures made was bright red, and to every appearance natural, while that from the two last punctures, those made to cut the pectinei, was dark, almost black, not turning red on exposure, and resembled very closely that found at the autopsy. Some whiskey was called for, but before it could be administered the teeth were clenched, the eyes rolled up, with the pupils widely dilated, and respiration suddenly ceased. Artificial respiration was at once resorted to, and kept up steadily for about thirty minutes; after three or four convulsive movements of the

chest there was no sign of life. Aqua ammonia was fruitlessly applied to the nostrils and injected (diluted 1 to 6) into the external jugular vein. It was found that respiration ceased at 4 o'clock, so that the patient was under the influence of the ether just three-fourths of an hour. The amount given was about four and a half ounces.

At the autopsy the heart was found normal in all respects.

DIAGNOSIS BETWEEN HYSTERICAL AND STRYCHNIC CONVULSIONS.

THE following extract from the paper by Dr. H. C. Wood on the late Wharton trial (in *N. Y. Medical Record* of April 15) is of general interest, as portraying the diagnostic difference between strychnic and hysterical convulsions.

MR. VAN NEE'S CASE.

Commenced with blindness and weakness.

Muscular symptoms commenced with rigidity of the neck, which gradually "crept over the body," affecting the extremities last.

Jaw rigidly set before a convulsion, and remained so between the paroxysms.

Persistent opisthotonos, and intense rigidity between the convulsions, and after the convulsions had ceased, the opisthotonos and intense rigidity lasted for hours.

Consciousness lost as the second convulsion came on, and lost with every other convulsion, the disturbance of consciousness and motility being simultaneous.

Desired to be fanned.

Crying spells, in which he "sobbed violently," and "cried like a child," alternated with the convulsions.

Eyes closed.

The spasms in leg must have been partial, as the feet were crossed and toes inverted, which could not happen if all the muscles were involved, because the muscles of eversion, being very much the stronger, would of necessity overcome the antagonistic muscles, and the feet be everted.

After the cessation of the convulsions, and the complete relaxation of the muscles through Sunday and Monday, the rigidity returned on Tuesday or Wednesday and lasted two weeks, as "rheumatic pains and stiffness," without any allegation or apparent possibility of a second dose of strychnia.

STRYCHNIA POISONING.

Begins with exhalation and restlessness, the special senses being usually much sharpened.* Dimness of vision may in some cases be manifested later, after the development of other symptoms, but even then is rare.

Muscular symptoms commence in the extremities, or the convulsion, when the dose is large, seizes the whole body simultaneously.†

Jaw the last part of the body to be affected; its muscles relax first, and even when during a severe convulsion it is set, it drops as soon as the latter ceases.‡

Muscular relaxation (rarely a slight rigidity) between the convulsions, the patient being exhausted and sweating. If recovery occur the convulsions gradually cease, leaving merely muscular soreness, and sometimes stiffness like that felt after violent exercise.§

Consciousness always preserved during convulsions, except when the latter become so intense that death is imminent from suffocation, in which case *sometimes* the patient becomes insensible from asphyxia; which comes on during the later part of a convulsion, and is almost a certain precursor of death.

The slightest "breath of air" produces a convulsion.¶

Patient may scream with pain, or may express great apprehensions, but such "crying spells" would appear to be impossible.

Eyes stretched wide open.**

Legs stiffly extended, with feet everted,†† as the spasms affect all the muscles of the leg.

No return of the symptoms is possible, without the exhibition of a second dose.

* Taylor on Poisons, p. 683. Wormley, *Microchemistry of Poisons*, p. 536.

† Wormley, p. 536. Stillé, *Therapeutics*, vol. II., p. 148.

‡ Taylor on Poisons, p. 134 and p. 682. Medical Jurisprudence, pp. 540, 541, 536. Tardieu, p. 924.

§ Taylor on Poisons, pp. 134, 136, 682. Wormley, pp. 536, 540, 541. Tardieu, *Clinique sur l'Empoisonnement*, pp. 924, 938, 939. Husemann, *Handbuch der Toxicologie*, p. 168.

¶ Wormley, p. 536. Taylor, *Medical Jurisprudence*, pp. 331, 332. Wharton and Stillé, *Medical Jurisprudence*, paragraph 757. Tardieu, p. 923. Stillé, *Therapeutics*, p. 148.

** Stillé, *Therapeutics*, p. 148.

†† Tardieu, p. 924; also other authorities, which I have neglected to note, and at present writing have not at hand.

Butyric Acid as a Preventive of Phosphorus Reactions.—It being desired to examine a fermented mass of sugar, milk, coffee, and bread, for phosphorus, all the reactions failed, even with the Mitscherlischen apparatus. Roussin, however, found that the free butyric acid masked the phosphorus; for when this was neutralized by carbonate of potash, testing in the Mitscherlischen apparatus afforded very evident proof of the presence of phosphorus.—*Vierteljahrschr. für Prakt. Pharm.*

Strychnia Poisoning Treated by Chloral Hydrate.—Dr. Angus Macdonald relates in the *Edinburgh Medical* for April, 1872, a case of strychnia poisoning. The man had been taking four drops of the *liquor strychniæ*, Br. Ph., for a long time, and one morning took an overdose. Three-quarters of an hour afterwards he reached the doctor's office in a cab, suffering from severe tetanic convulsions. Chloroform was given by inhalation, but as soon as the anæsthesia passed off the spasms recurred. Thirty grains of the chloral hydrate were given, and in seven minutes the spasms having notably abated, twenty-eight grains more. From this time the convulsions became rapidly less and less frequent, and in about twenty minutes the patient fell asleep and had no more spasms.

Poisoning by Goanji (Seeds of *Abrus Pectorius*).—Dr. A. S. G. Jayakar reports in the *Indian Medical Gazette* for December, 1871, a case of poisoning by the seeds of *Abrus pectorius*. A man, two hours after taking forty seeds, was taken with severe vomiting and purging, which continued until his admission into the hospital some hours afterwards. At that time he was profoundly collapsed, still retching but not purging, and suffering from cramps and suppression of urine. Under appropriate treatment he finally recovered. Dr. Jayakar remarks the symptoms throughout most closely simulated those of cholera.

TOXICOLOGICAL NOTES.

It is stated in the *Chemical News* that Dr. James St. Clair Gray, Assistant to the Professor of Medical Jurisprudence in the University of Glasgow, has read a paper to the Chemical Section of the Glasgow

Philosophical Society, "On Certain Fallacies in the Means of Detecting some Poisons." He pointed out that Reinsch's test for arsenic is liable to fail when the arsenic has undergone oxidation to arsenic acid, or when it exists in the state of sulphuret. He advises the reduction of the arsenic acid by means of sulphite of an alkali; and in the instance of the sulphuret, he would boil with caustic potash and dialyse. He notes also that the presence of alcohol, chloroform, or ether prevents the precipitation of the red iodide of mercury.—*British Medical Journal*, March 16, 1872.

Alcoholic Poisoning—Hypodermic Injection of Tartar Emetic.—In the *Indian Medical Gazette* of Nov. are reported two cases of acute cephalic congestion, presumably from alcohol, in which $\frac{1}{4}$ grain injections of tartar-emetic were practised, apparently without causing emesis.

Poisoning by Chloral Hydrate.—A person who suffered from palpitation and shortness of breath took four grammes of chloral hydrate. (about 3 j.) in water, and shortly afterwards anæsthesia was so complete that two teeth were drawn without causing pain. Immediately after the operation the face grew red and then pale, and in some minutes the patient was dead. At the autopsy the lungs were found somewhat tuberculous, the left heart with thin walls, the tricuspid valve hardened and stiff, and serous effusion in the pericardium, pleural cavity, and between the membranes of the brain.—*Centralblatt für die Medicin Wissenschaft*, March 16.

Glanders Cured.—A case of glanders in a man, cured by the internal use of carbolic acid, is reported in the Proceedings of the Minnesota State Medical Society.—*Georgia Medical Companion*.

Aconitia.—In the *L'Union Pharmaceutique* for February, 1872, M. Duquesnel has a paper upon the salts of aconitia and the different varieties of the alkaloid.

He found that when a sparrow was poisoned with a half milligramme of the alkaloid the following results were obtained:—With crystallized aconitia, death in one minute. With aconitia of the French Codex (Hottot), death in fifteen minutes. With German aconitia (Merck), death in an hour and fifteen minutes. With French aconitia (Commercial), death in two hours. With napelline (of Hübschmann), profound sleep—not followed by death.

A number of repetitions of this experiment gave substantially the same result.

The Milk of Cows affected with Rinderpest.—M. Husson analyzed the milk of cows affected with the rinderpest. There were 22

cows in three stables; four of them were profoundly affected, 14, more or less, doubtfully so, and 4 were still apparently healthy.

	Milk of healthy Cows.	Milk of slightly sick.	Milk of very sick.	Normal Milk
Butter	16.96	14.98	12.60	30
Sugar	33.90	31.40	16.45	50
Casein .....	.....	50.25	.....	34
Albumen .....	.....	20.60	.....	6
Salts .....	.....	18.50	.....	7

The milk of the affected cows had a more or less pronounced red-dish-yellow color.

If the rinderpest has broken out in a stable all the animals are more or less affected, and the milk as well as the flesh is capable of imparting the disease, both to man and animals. From the commencement of the disease the proportion of sugar and butter diminishes greatly, and that of casein and albuminous matter rises.—*Chem. Centralblatt*, III., Nov. 1, S. 8.

Test for Nitric Acid in Water.—According to Edward Nicholson (*Madras Monthly*, May, 1871), brucia offers a more delicate test for nitric acid and the nitrates, when employed by evaporation of the suspected liquid to dryness, the addition of a drop or two of strong sulphuric acid, and the application of a fragment of brucine, than when the test-tube, as commended by Dr. Parker (*Manual of Hygiene*) is used. Mr. Nicholson found that the residue left by the evaporation of 1 c.m. of water containing one-tenth milligramme of the nitrate of potash gave a distinct rose color with the alkaloid.—*Chemical News*, Feb. 23, 1872.

Influence of Aniline and other Petroleum Colors on Man.—W. Mayer states in the *Bayerische Industrie und Gewerbe-Blatt*, Jan., 1872, that when these colors are pure they are toxicologically inert; that the aniline colors often contain arsenic and picric acid, and the phenol pigments (coralline, etc.) carbolic acid, to which impurities their poisonous powers are solely due.

Zinc in Water.—In Guy's Hospital Report, 1872, Dr. Thomas Stevenson says that water, running through galvanized pipes, often contains largely of zinc, and that the best test for that metal in water is the addition of the ferrocyanide of potassium to the clear water, previously acidulated with hydrochloric acid. If any zinc be present a whitish precipitate will result.

Opium Poisoning.—In the Philadelphia *Medical Times* of June 1, Dr. Chas. G. Smith and H. C. Hand, after detailing a case speak as follows:—

“To recapitulate, the points of interest in this case are: 1. That one and a half fluid ounces of laudanum were taken, the most of which was absorbed. 2. The hypodermic injection of one-sixteenth of a grain of atropia dilated the pupils widely, but had *no effect whatever* on the pulse, respiration, or color of the skin. 3. The magneto-electric and faradic currents were each found more useful for being intermitted and alternated. Benefit was also noted from occasionally shifting one pole from over the position of the phrenic nerve to the spinal column. 4. By far the most important remedial measure used was ARTIFICIAL RESPIRATION. During three hours it was continuously persevered in, with the constant hope that natural respiration would come to our relief. Twice in this time an attempt at such respiration became apparent. This, favored by the use of the batteries, continued each time about five minutes, when it ceased and the pulse became small and fluttering. For these three hours of vital importance, death was kept from assuming his dominion only by rhythmical breathing performed mechanically for the patient, not by him. At the close of the third hour, the vital forces—the heart’s action especially—were failing, in spite of the artificial respiration, and it seemed almost certain that this means could preserve life but little longer. Magneto-electricity, with unexpected efficacy, now furnished the stimulus needed to strengthen the heart and elicit those first evidences of return to life so grateful to his almost hopeless attendants. The method of respiration used was Sylvester’s, with an occasional change to that recommended by Dr. Benjamin Howard. Both methods were efficient; the change from one to the other was beneficial, because in this way the operator obtained a little rest, and because deeper respirations could be forced on making the change after the chest had become accustomed to one method.

In conclusion, we might mention another case of opium-narcotism in a young woman which was nearly as profound as this, and in which we had the satisfaction of seeing signs of life return after a steady perseverance in artificial respiration for an hour and a half. Five grains of morphia had been taken and retained three hours before she was seen. When we first saw her there was only an occasional respiration, which soon entirely ceased. The stomach-pump could not be used, for we did not dare to intermit the artificial respiration long enough for it. No atropia and no electricity were used.

Diaper-Pin.—Dr. O’Hara says (Philadelphia *Medical Times*):

In one case a safety diaper-pin was passed—maliciously, there was reason to believe—into the œsophagus of a child, where it remained until, suffocation being imminent, it was pushed down into the stomach by the child's mother, who had previously attempted in vain to remove it through the mouth. The diaper-pin, which was of silver, gave rise to no irritation whatever during the whole time it remained in the digestive tract, the bowels continuing to perform their functions regularly. It was voided five months and three days after the date of the accident.

Phosphorus Poisoning.—Dr. Dound relates the case of a woman who drank, with suicidal intent, some water in which three large packets of matches had been boiled for half an hour. Shortly after the act she suffered slight burning pains in the œsophagus and stomach. Five hours afterwards she drank large quantities of milk, which brought on severe, incessant vomiting, which continued until the arrival of Dr. Dound, and afterwards for many hours. He found her with pale, contracted face; the breath alliaceous in odor; the pulse contracted, 96; the voice feeble; the matters vomited scanty, mucous, containing no phosphorus. There was pain and tenderness, slight in the epigastrium, very marked in the right hypochondrium. There were no evidences of enlargement of the liver, and no jaundice. Hydrate of magnesia to be taken in large quantity, diffused through water, deprived of its air by boiling, and oil of turpentine in capsules, were prescribed. By evening two grammes of the latter had been retained, none of the former. No urine was passed until late the next day (the third after the poisoning). By this time the conjunctiva had become icterode, the right hypochondrium very painful. The pulse was 84°, and the temperature 36½° C. The turpentine was continued. On the fourth day the vomiting had greatly abated. The urine was not albuminous, and gave off the odor of violets. There was still severe pain in the hypochondrium. From this time the patient slowly convalesced, remaining for a long time weak, without appetite, and anæmic.—*Revue de Thérap. Medico-Chirurgicale*, May, 1872.

The Vegetable Poison Maschi.—K. F. Appun, in his "Travels," speaks as follows of this nearly unknown poison:—

The Serekongs of British Guiana prepare the fearful poison, known as *Maschi*, which is made out of the rootstocks of *Arum venenatum* W., and has an arsenical look. The rhizomes are dried in the sun and reduced to a fine powder, which is preserved in quills. According to the dose, the poisoned persons may live on for months, gradually wast-

ing away, and finally die in torments, or he may give up the ghost after an hour of terrible, burning, intestinal pain and repeated spasms.

The poisoner places the powder upon the lips or on the nostrils of his victim whilst asleep, in such a way that when he wakes he will draw it in with his breath, or lick it off his lips; or else he gives a feast to his victim, and, after drinking himself from the full calabash, hands it to him, holding it in such a manner that his thumb is plunged into the liquid, and the poison which has been concealed under the nail is dissolved out.—*Vierteljahrschr. für prakt. Pharmacie*, Heft 2, 1872.

Poisoning by Yew Leaves.—According to the *Imparziale*, the first fatal case of this recently happened near Turin. A girl, nineteen years old, took as an emmenagogue an infusion of Yew leaves representing daily 120 to 150 grammes of leaves for three days, and 200 grammes the fourth day. After the fourth day's allowance she was seized with uncontrollable vomiting and died in eight hours. At the post-mortem nothing abnormal was made out.—*Ibid.*

Influence of Sugar upon Magnesia as an Antidote to Arsenic and other Metals.—Carles, who discovered that sugar rendered magnesia as well as lime much more soluble than normally, attempted to use the saccharine solution of magnesia as an antidote to arsenic, but to his surprise found the arsenical-magnesian salt rendered itself soluble by the sugar. Sugar, therefore, makes magnesia of no use as an antidote to the poison spoken of.

If, however, the saccharine magnesia is employed against the compounds of lead, copper, antimony, and quicksilver, it acts by decomposing them, not by uniting with them, and the sugar aids in the reduction of the oxide.

The saccharine magnesia seems, then, to be a good antidote to the metallic salts, with the exception of those of arsenic. The best formula for it appears to be as follows:

Take of Magnesia (Henry's ?).....	2½ drachms.
Sugar.....	5½ drachms.
Boiling water.....	3 ounces.

Dissolve.

—*Vierteljahrschr. für prakt. Pharm.*, Heft 2.

Yeast a Poison for Bees.—According to Mirus, if a little yeast be mixed with honey, bees will take it greedily and be poisoned by it.—*Ibid.*

Lightning Stroke.—In the *London Lancet* of July 20th, Drs. Clarke and Brigham detail two cases of stroke from one bolt. The woman escaped with a temporary paralysis of one arm and a permanent drying of the milk in the breast of the same side. The old man died after about forty-eight hours. At the post-mortem the skull was found fractured, a small irregular triangular piece being blackened and loosened. A large quantity of thick fluid blood was found beneath the torn membranes, and the substance of the right hemisphere was very much softened. Rigor mortis came on very slowly.

Recognition of Phosphorus Poisoning.—M. Poulet stated before the French Academy of Science that phosphorus is always eliminated in the urine, when taken internally, in the form of hypophosphoric acid, and that taking advantage of this, the existence of phosphorus poisoning can be readily recognized or disproved. To discover hypophosphoric acid in the urine, nitric acid should be added to it, and the whole heated to calcination. If the acid be present, as dryness is reached the mixture suddenly bursts into flame like a packet of matches.—*Gazette Médicale de Paris*, August 17, 1872.

Murder by a Needle.—An extremely interesting medico-legal case is reported from Limberg. The wife of the attendant at the anatomical cabinet died suddenly and without visible sign of disease or injury. This led to a post-mortem, which at first revealed no cause of death. A closer examination, however, discovered an almost imperceptible red point in the region of the heart, resembling the bite of a flea. This region was of course at once examined to disclose a broken needle in the heart.

The murderer, thoroughly familiar with the anatomy of the body, had doubtless sacrificed his victim during sleep. The anatomical servant was at once arrested.—*The Clinic*.

Arsenic in Lamp Shades.—A German doctor has described two cases in Jena, and one in Frankfort, where persons using green glazed paper-shades were attacked with symptoms of arsenic poisoning. In no case did the symptoms cease until the use of the shade was discontinued. The heat of the lamp volatilizing the arsenic, renders the small quantity present very dangerous.—*Med. and Surg. Reporter*.

Death from Bichloride of Methylen.—A man aged 51 was about to be operated on by Mr. Gore, at the Bath United Hospital, for the reduction of a dislocation. The bichloride of methylene was given, and the patient became insensible in two or three minutes, but his face then became livid and his breathing suspended. The pulse was at the same time observed to fail. The tongue was drawn forward, ammonia was given, and the galvanic battery was used for three-quarters of an hour, but without effect. The heart was found to be large and flabby, but there was no other sign of disease in the organ. At the inquest Mr. Gore said that bichloride of methylene had been used there two hundred and fifty times in the last two years.—*Brit. Med. Journ.*, Aug. 31, 1872.

Poisonous Ink.—According to the *Zeitschrift Oester. Apothek. Vereins*, of Aug. 1st, there has appeared in the German market an ink made of the nuts of anacardia. In several cases gloves were colored with this ink, and the result was a pustular eruption upon the hands, which speedily disappeared, to be followed by an intense inflammation of the skin, confined to the arm or spreading almost all over the body.

Poison by Stramonium.—Dr. A. W. Rogers was called to see a little girl, three years of age, in a state of wild delirium. It was with great difficulty that the mother could hold her on her lap. She would forcibly throw out her legs and stiffen them, and at the same time throw them wide apart from each other. The arms were being constantly thrown out, as if trying to reach and get hold of something; and sometimes it seemed as if some object had been secured, and was for a moment fumbled in the fingers. The pupils were dilated, and the eye looked wild. The cry was a kind of scream; a little froth was seen in the mouth; the surface of the skin was hot; the restlessness was very great.

Under the influence of an emetic she soon vomited matters containing the seeds of the stramonium, many plants of which grew near the house. Afterwards a dose of castor-oil was given, and more of the seeds were passed from the bowels.

The symptoms continued through the night, and, in an abated form, part of the next day. The mouth and throat were very dry, and the saliva very viscid, but by the next evening these, with the other symptoms, so much lessened that the child slept some, and the next day but one after the poisoning was pretty well.—*Med. and Surg. Reporter*.

Antidote for Carbolic Acid.—Th. Husemann has investigated (*N. Jahrb. für Pharm.*) this subject, and arrived at the following conclusions: Fatty oils, glycerine, and other similar demulcent materials, do not weaken the action of the poison. Of glycerine it was observed that it was itself poisonous to frogs.

Alkalies and other alkaline earths, especially when used in great excess in solution, acted more favorably. The best antidote was made by dissolving 16 parts of sugar in 40 parts of water, and adding 5 parts of chalk, previously calcined and mixed with a little water, digesting for three days, with frequent agitation, filtering, and evaporating the filtrate to dryness. The resulting "sugar-chalk" is freely soluble in water, and is the best known antidote to carbolic acid.—*Vierteljahrsschrift für prakt. Pharm.*, July, 1872.

Hair Tonics.—In the *Vierteljahrsschrift für prakt. Pharm.* is an analysis by Wittstein of two hair restorers, the labels of which claim that they are harmless. Both Mrs. L. A. Allen's World Hair Restorer and the Hair Restorer of Dr. Brabender contain a large per cent. of lead.

Poisoning by Chloral Hydrate and Morphia.—In *Schmidt's Jahrbücher* of May 16, 1872, is detailed a case in which a patient took, inside of 12 hours, 8 grammes of chloral hydrate and .06 grammes of morphia, and recovered.

Poisoning by Gloriosa Superba.—The *Gloriosa superba* is a handsome climbing plant of the family *Tiliaceæ*, growing in India, where its root is much used for poisoning. Dr. Hein Chunder Bhittacharjee details a case in the *Indian Medical Gazette* of July 1. The symptoms came on suddenly half an hour after administration, and death took place 2½ hours afterwards. There was sudden retching, with violent vomiting; spasms, contortions, and racking pains over the whole body; short intervals of relief, with return of the symptoms in constantly increasing violence.

At the autopsy the brain and its membranes were highly congested; also lungs, liver, and kidney. The spleen was pulpy, extravasated with blood. The mucous membrane of the stomach and bowels highly inflamed.

Poisoning by Chloroform ; by Arsenic.—Dr. Poorna Chunder Banerjee details (*Indian Medical Gazette*, Aug. 1) the case of a man who swallowed, with suicidal intent, an ounce of chloroform, and was not seen for four hours afterwards, but recovered under the use of emetics and other proper remedies.

In the same journal, Dr. E. D. Mackenzie gives an account of a man who took large lumps of arsenic, and received no treatment for sixteen hours. He had severe symptoms developed about 18 hours after the ingestion of the poison, but finally passed from the rectum the two lumps of arsenic, weighing together 105 grains. The treatment consisted mainly in the free use of the hydrated sesquioxide of iron and castor-oil.

Musculus Venosus.—Dr. Francis Crumpe states, in the *Dublin Journal of Medical Sciences* for October, that in a dock near the town of Tralee, Ireland, there is a mussel very similar to *Musculus edibilia*, but many times larger, which, instead of being edible, is a deadly poison. They induce both in man and animals a state of collapse with intense loss of muscular power, without marked acceleration of pulse (unless towards death). On a post-mortem examination of a fatal case the stomach and intestines were found immensely distended with gas. A number of experiments are detailed. Almost the only symptom was motor paralysis.

Led by this, Dr. Crumpe treated a case of traumatic tetanus with three of the raw mussels, and in three hours the symptoms were markedly alleviated. There was no relapse, and the woman recovered.

Death from Ether.—Dr. W. B. Dunning, Acting House Surgeon, at the Bellevue Hospital, New York, reports (*Medical Record*, Oct. 1, 1872) the case of J. S., a saddler, aged 68, who was admitted into the hospital on August 2, 1872, suffering from a fracture of the left femur, just below the trochanter. The administration of the anæsthetic was slowly and carefully made, and after perhaps ten minutes the patient was fully under its influence and the operation begun. A few turns of the plaster had been made, when the patient's breathing was observed to be rather frequent and gasping. The pulse was, however, full and regular. The thorax was compressed two or three times, and the patient's breathing again became normal. As these symptoms not rarely occur during etherization, they excited no special alarm. The ether was, however, withheld from the patient four or five minutes, his respiration and pulse being normal. As he then began, however, to move about, and his muscles were becoming rigid, the ether cone was again applied. In a minute or two, the assistant, who was giving

the ether, observed the pupils to be dilating rapidly and the breathing to cease. His heart was still beating, however. The ether cone was of course immediately removed and artificial respiration was again used, and all the batteries obtainable in the hospital were put in operation in an effort to resuscitate the patient. His muscles occasionally responded by a spasmodic movement, but no breathing again occurred. The efforts at resuscitation were continued about forty minutes, until all response to the action of the battery had ceased.

Autopsy was made three hours after death. Rigor mortis was marked. Blood was fluid. Heart contained a little fluid blood, with a little atheroma at base of aortic valves. The lower lobe of right lung was œdematous, and its lower portion in a state of red hepatization. The ether was pure, and about 6 ounces were employed.

Poisoning by Aconite.—Miss C. D., æt. 65, weight about two hundred and eighty pounds, took by mistake $\frac{f}{3}$ i. of tinc. aconite root, at seven o'clock P.M. A quarter of an hour afterwards she drank freely of milk and eggs. At about twenty minutes past eight a physician arrived and caused her to vomit freely. There was great numbness in all the extremities, and in an hour or two a terrible choking sensation. Pulse irregular, and sixty per minute. At 10.45 P.M. her pulse was imperceptible, and she was in a very profuse cold perspiration; there were slight convulsions. Her surface felt like that of a dead person. At 11.15 P.M. she was apparently dead, so far as respiration or circulation could be discerned; yet she kept some part of the body moving, and in less than an hour began to rally. By midnight her pulse was perceptible; she continued to improve, and by nine o'clock next morning she was recovered.

Stimulants (brandy) and external heat constituted the treatment.—G. Cox, M.D., *Philadelphia Med. Times*, Nov. 2.

Death from a Grain of Morphia.—In the *London Lancet* of July 6th, is detailed the case of a lady who died twelve hours after the ingestion of a grain of morphia. She was suffering from large abdominal tumors and dropsy.

Part 4.

PRESCRIPTIONS AND FORMULAS.

Rheumatic Ophthalmia. (Dr. — Power's Formula).

℞ Tr. aconiti rad min. xxiv.
 Tr. colchici f. dr. ijss.
 Aquæ camphoræ . . . f. oz. iv. M.
 S. A tablespoonful three or four times a day.—*Georgia Medical Companion.*

For Infantile Eczema.

℞ Vini ferri,
 Syrup tolutani, aa . . . f. oz. ss.
 Liq. arsenicalis min. xii.
 Aquæ anethi f. oz. i. M.
 S. Teaspoonful to child two years old, three times a day, after meals. This is almost a specific.—*Erasmus Wilson.*

A Case of Calculus Nephritis.

Dr. Wm. M. Chambers, of Effingham, Illinois (*Chicago Medical Examiner*), reported a case of calculus nephritis in which recovery followed the subjoined treatment:

Externally, a blister; internally, with the following mixture:

℞ Potass. acetatis . . . oz. ss.
 Vini colchici oz. ss.
 Spts. nitrosi dulcis . . oz. ii.
 Tinct. opii. camph . . oz. ss.
 Fl. ex. belladonnæ . . dr. i.
 Aq. cinnamomi oz. ss. M.

Sig. One teaspoonful every three hours.

A calculus of phosphate of lime, weighing five grains, passed the urethra the day following.

Aperient and Alterative,

Useful in children suffering from dyspepsia, with offensive breath, acid eructations, sour evacuations and constipation:

℞ Sodæ bicarbonatis . . grs. xx.
 Tr. rhei f. drs. ij.
 Infus. calumbæ,
 Decoc. taraxaci . . aa f. dr. vii. M.
 S. Two teaspoonfuls to be taken night and morning. For a child one year old.—*Georgia Medical Companion.*

Prescription for Softening of Bones in Children.

℞ Calcis phosphatis . . dr. ij.
 Calcis carbonatis . . . dr. i.
 Sacch. lactis dr. iij. M.
 S. 10 or 20 grains two or three times a day in sweetened milk.—*Ibid.*

Periodical Headache. A New Method of Curative Treatment.

Extract from an article by F. Bradnack, M.D. (*Buffalo Medical and Surgical Journal*).—In the proposed treatment of this disease, we of course adhere to general principles. If there exist complications, whether or no they be assumed to act as exciting causes, they should be removed, or, so far as possible, palliated. If there be constipation, the usual treatment for constipation is indicated. If examination reveals the existence of a uterine displacement, it should be remedied. If tobacco be used in excess, it must be either discontinued or used in moderation. Suppose the treatment to be commenced the day after an attack of headache. Assuming the non-existence of any important physical lesion, I find it advantageous, provided there are no contraindications, to begin by the administration

at night of one or two of the following pills, which, during the entire course of treatment (say six months) may be given once in three weeks:

℞ Mass hyd.,
Ext. coloc. com.,
Pulv. aloes soc. ʒ j.
Pulv. Ipecac. gr. vj.
Ft. pil., no xij. M.

This pill to be followed in the morning by one drachm of sulphate of magnesia.

As a permanent medicine I then prescribe three (3) drops of liquor potassæ arsenitis, to be taken in one (1) drachm of water after each meal, for certainly three, and usually six months, its use being suspended one day every three weeks when the above pill is taken.

If the patient be delicate, and complains much of coldness of the extremities during the attacks, and frequent chilliness during the intervals, the following prescription is substituted for the liquor potassæ arsenitis:

℞ Liq. arsenicalis hydrochlorici. 3 ss.
Quiniæ disulphat. gr. xij.
Liq. ferri perchloridi. 3 ij.
Aquæ. f ʒ vj.
M.

8. One tablespoonful in a wine-glassful of water, twice a day, after meals.

When an attack of headache begins I adopt the following plan, with minor modifications according to existing circumstances and complications. I direct the patient to sit in an easy-chair (avoiding the recumbent position, as tending to cerebral congestion by means of gravitation), and to place his or her feet in a hot bath of mustard water, the hands also in a similar hot bath, minus the mustard; and if it can be tolerated (though females frequently cannot tolerate it), a bag of pounded ice to be placed upon the head, covering as much as possible of the occipital region, and thereby bringing a decongestive influence to bear upon the cerebellum and the medulla oblongata. These accessory measures to be followed by a dose of the following medicine:

℞ Potassii bromid. 3 vj.
Ammon. bromid. 3 ij.
Potassii iodidi gr. vj.
Infus. calumbæ. f ʒ iiij. M.
8. One dessert-spoonful in an ounce of water.

One or two doses of this prescription will usually suffice either to very greatly palliate, or else entirely relieve the most distressing paroxysms.

Elixirs and Wines.

BY C. LEWIS DIEHL.

Elixir of Calisaya Bark.

The formula of this elixir I have already published in the *Am. Jour. of Pharm.*, vol. xl.; but I venture to repeat it, with such modifications in the technical directions as may have occurred to me during my manipulations since then.

Take of Calisaya bark. ʒ xxiv.
Curaçoa orange-peel (ribbons), ʒ xvi.
Coriander. ʒ iv.
Cardamom. ʒ iss.
Cinnamon (Ceylon). ʒ iiij.
Anise. ʒ j.
Cocoa (Baker's) ʒ viij.

Reduce to a moderately fine powder; displace with a mixture consisting of 1 part by measure of stronger alcohol and 3 parts of water; obtain two and a half gallons of percolate.

Meanwhile prepare, from six pints of solution of tersulph. of iron, hydrated sesquioxide of iron by the formula of the Pharmacopœia, measure it, and add to every four measures one measure of alcohol; then add of this sufficient to the percolate obtained as above, to deprive it of its cincho-tannic acid. The absence of the latter is readily ascertained by the addition of a drop of muriated tincture of iron to a filtered portion of the liquid in operation, which should not be colored by such addition. Should coloration result, the intensity or faintness will serve as a guide to the further quantity of hydrated sesquioxide of iron necessary to completely detannate the preparation. As soon as this result is obtained, strain

the mixture upon a muslin strainer; and when the liquid ceases to pass, wash the residue upon the strainer with sufficient of a mixture of one measure of stronger alcohol to three of water, to make the strained liquid measure five gallons. Now triturate together oil of orange (fresh), $\text{f. } \frac{3}{4}$ ss. (or solution, $\text{f. } \frac{3}{4}$ v.; see further on); carbonate of magnesia, $\frac{3}{4}$ vj. When thoroughly mixed incorporate it with the strained liquid obtained as above, agitate well, and filter through paper; express the filter between muslin, filter the expressed liquid, and mix with the previous filtrate, in which dissolve 15 lbs. of sugar. If necessary, filter the elixir thus obtained; but simple straining will usually answer.

Simple Elixir.

Take Oil of orange (fresh), $\text{f. } \frac{3}{4}$ j.; or solution..... $\text{f. } \frac{3}{4}$ x.
 Oil of cinna, M. x. ; or solution..... M. c.
 Oil of anise, M. iv. ; or solution..... M. xl.
 Oil of bitter almonds, M. ij.
 or solution..... M. xx.
 Tinct. of cardamom..... $\text{f. } \frac{3}{4}$ x.
 Stronger alcohol.... 3 ij.

Dissolve the oils in the alcohol, add the tincture, and triturate the solution with a previously-powdered mixture of cocoa (Baker's), $\frac{3}{4}$ j.; carb. magnesia, $\frac{3}{4}$ ij. Then add gradually four and a half pints of water, transfer the mixture to a one-gallon bottle, agitate occasionally for several hours, and filter; express the filter between muslin, filter the expressed liquid, mix with the previous filtrate, and dissolve it in 3 lb. av. of sugar; filter or strain, as may be necessary.

The simple elixir thus prepared has the color of dark Madeira wine, and an exceedingly pleasant taste. It serves as a vehicle for many medicines, disguising them to a great extent, and rendering them generally more palatable.

Wine of Orange.

Take Oil of orange (fresh), M. v. ; or solution... M. l.
 Alcohol..... $\text{f. } \frac{3}{4}$ ss.
 Carb. magnes..... $\frac{3}{4}$ ss.
 Triturate together, and add syrup $\text{f. } \frac{3}{4}$ ij.; sherry wine, $\text{f. } \frac{3}{4}$ xij. ss.; mix thoroughly, and filter.

The wine obtained in this way has an agreeable flavor of orange. The use of carbonate of magnesia renders it neutral, and thus enables the introduction of medicinal compounds that are liable to decomposition in the presence of acids.

Solution of Essential Oils.

I have been in the habit of dissolving essential oils that are liable to change in alcohol, and have found these solutions very convenient for measuring minute quantities of oils. They are prepared by dissolving essential oil, 1 part (by measure), in alcohol fort, 9 parts; which strength is invariably meant when, in the formulas, I direct the use of solutions of essential oils.

Cochineal Color.

Take of Cochineal $\frac{3}{4}$ j.
 Carb. potassa..... $\frac{3}{4}$ ss.
 Powd. alum $\frac{3}{4}$ ss.
 Cream of tartar $\frac{3}{4}$ j.
 Water..... $\frac{3}{4}$ viij.

Reduce the cochineal to a fine powder, add the carbonate of potassa, and triturate with three ounces of the water. Allow the mixture to stand one hour, add the alum and cream of tartar successively, and, when effervescence has ceased, the remaining water; filter. This solution imparts to the elixirs a fine red color; but is in some respects unsatisfactory, as it soon spoils.

The above are all the preparations that need to be kept in stock; and with them, and such other ingredients as are readily obtained by purchase, almost all the elixirs and wines now prescribed may be prepared extemporaneously. The exceptions to these are:

Compound Elixir of Taraxacum,

which, being used for the purpose of

disguising the extreme bitterness of quinia, should be prepared according to the original formula of Mr. Candina, as communicated by him to the American Pharmaceutical Association.

Elixir of Pyrophosphate of Iron, Quinia, and Strychnia

requires particular manipulation, which precludes the use of simple elixir. The following formula—the result of concert of experiments of my friend Mr. E. Scheffer and myself—has been used by me since autumn, 1869, and I can recommend it as uniformly successful when the manipulation is carefully conducted:

Take Sulphate of quinia..... 60 gr
Strychnia..... 1 gr.
Citric acid..... 5 gr.
Stronger Alcohol..... f. ʒ iij
Solution of oil of orange.. ℥ l.
Syrup..... f. ʒ vi.
Pyrophosphate of Iron.... 3 ss.
Distilled water..... f. ʒ vij
Aque ammoniæ..... q. s.

Triturate the sulphate of quinia, strychnia, and citric acid together until minutely divided, then add the alcohol and solution of oil of orange, warm the syrup slightly (to about 150° F.), and add to the turbid alcoholic mixture, when upon stirring the mixture becomes clear. To this add the pyrophosphate of iron previously dissolved in the distilled water, and finally aqua ammonia carefully (drop by drop), until the elixir is perfectly neutral to test paper; filter. The finished preparation has a greenish-yellow color, a pleasant flavor of orange, and is permanent.

Elixir of Calisaya Bark with Iron.

Take of pyrophosphate of iron 128 grains, soften in two ounces of water, and stir in gradually one pint of elixir of calisaya bark; filter.

Elixir of Calisaya Bark with Iron and Strychnia.

Dissolve one grain each of strychnia and of citric acid in two ounces of water; add one pint of elixir of calisaya bark with iron; mix and filter.

Elixir of Calisaya Bark with Iron and Bismuth.

Dissolve 128 grains of pyrophosphate of iron and 128 grains of ammonio-citrate of bismuth in two ounces of distilled water, add fourteen ounces of elixir of calisaya bark; mix and filter.

Elixir of Calisaya Bark with Iron, Bismuth, and Strychnia.

Dissolve one grain of sulphate of strychnia in two ounces of water, add one pint of elixir of calisaya bark with iron and bismuth; mix and filter.

Elixir of Calisaya Bark with Iron and Beef.

Dissolve one-half ounce of extract of beef (prepared by Liebig's method) in one pint of elixir of calisaya bark with iron; allow it to stand several days if possible, and filter.

Elixir of Pyrophosphate of Iron.

Soften 256 grains of pyrophosphate of iron in a half ounce of water, add fifteen and a half ounces of simple elixir; mix and filter.

Elixir of Bismuth.

Dissolve 256 grains of ammonio-citrate of bismuth in four ounces of distilled water; mix with twelve ounces of simple elixir, and filter.

Elixir of Valerianate of Ammonia.

Dissolve 256 grains of valerianate of ammonia in two ounces of simple elixir, carefully add aqua ammonia until the solution is exactly neutralized; then mix with fourteen ounces of simple elixir, filter, and color with cochineal color to a bright red.

Elixir of Valerianate of Ammonia and Quinia.

Triturate 64 grains of valerianate of quinia until minutely divided, then dissolve it in one pint of elixir of valerianate of ammonia, and filter.

Elixir of Valerianate of Ammonia, Quinia, and Strychnia.

Dissolve two grains of strychnia in two ounces of water, by the aid of just sufficient valerianic acid; mix with one pint of elixir of valerianate of ammonia and quinia, and filter.

Elixir of Valerianate of Quinia.

Triturate 128 grains of the valerianate of quinia until minutely divided; mix with one pint of simple elixir; carefully add valerianic acid until the liquor becomes clear, shaking after each addition, and filter.

Elixir of Valerianate of Quinia and Strychnia.

Dissolve two grains of strychnia, minutely divided, in two ounces of water, by the aid of just sufficient valerianic acid; mix with one pint of elixir of valerianate of quinia, and filter.

Elixir of Valerianate of Strychnia.

Dissolve three grains of strychnia in two ounces of water, by the aid of just sufficient valerianic acid; mix with one pint of simple elixir, and filter.

Elixir of Bromide of Potassium.

Dissolve one ounce of bromide of potassium and one ounce of sugar in one pint of simple elixir; add twenty minims of solution of oil of orange, and ten minims of solution of oil of bitter almonds, and filter; color with cochineal color.

Elixir of Bromide of Sodium.

Prepare this like elixir of bromide of potassium, substituting bromide of sodium for bromide of potassium, and omitting the color.

Elixir of Bromide of Ammonium.

Prepare this like elixir of bromide of potassium, substituting bromide of ammonium for bromide of potassium, and omitting the color.

Elixir of Hops.

Add two and a half ounces of fluid extract of hops (prepared according to U. S. formula for f. e. gentian) to thirteen and a half ounces of simple elixir; mix and filter.

Elixir of Lupulin.

Triturate two ounces of fluid extract of lupulin with two ounces of carbonate of magnesia; add fourteen ounces of simple elixir, transfer to a bottle, agitate occasionally for several hours, and filter.

Elixir of Gentian and Pyrophosphate of Iron.

Triturate 100 minims of solution of oil of orange with two ounces of sugar; dissolve it in eight ounces of elixir of pyrophosphate of iron and six ounces of simple elixir; add one-half ounce of alcohol and one-half ounce of fluid extract of gentian; mix and filter.

Elixir of Chloral Hydrate.*

Dissolve two ounces of chloral hydrate in one pint of simple elixir, and filter.

Wine of Iron.

Dissolve 128 grains of ammonio-citrate of iron in two ounces of water; add one pint of wine of orange; mix and filter.

Bitter Wine of Iron.

Dissolve 128 grains of soluble citrate of iron and quinia in two ounces of water; add one pint of wine of orange; mix and filter.

Wine of Wild Cherry Bark.

Mix one ounce of fluid extract of wild cherry bark, two ounces of syrup of wild cherry bark, ten minims of solution of oil of bitter almonds, and thirteen ounces

* This elixir was first prepared by me at the request of a gentleman who habitually used the chloral hydrate, and he finds that the chloral dissolved in this way retains its virtues most completely during the period required for the consumption of one quart. For this reason I have given the formula for its preparation, thinking that if such a preparation is desirable this seems to serve the purpose.

of wine of orange. Allow to stand several days, and filter.

Wine of Wild Cherry Bark and Pyrophosphate of Iron.

Soften 128 grains of pyrophosphate of iron in two drachms of water; add one pint of wine of wild cherry bark; mix and filter.

Wine of Beef.

Dissolve half an ounce of extract of beef (prepared according to Liebig's method) in one pint of wine of orange, and filter.

Wine of Beef and Iron.

Dissolve half an ounce of extract of beef (Liebig's method) in one pint of wine of iron, and filter.—*American Practitioner*, April 1, 1872.

Glycerine Jelly.

1. Take pure glycerine and add powdered tragacanth to thicken, and perfume.
2. Take Transparent soap 1 oz.
Water..... 4 oz.
Inodorous glycerine..... 24 oz.

(All by weight).

Dissolve the soap in the water by heat, adding an equal weight of glycerine. When dissolved, add the remaining portion of glycerine, and sufficient water to make up the weight. When nearly cool, add any suitable perfume, and pour in glass jars. It has a very pale amber color, is transparent, melts easily on the skin, and leaves no residue.—*Chemist and Druggist*.

Elixir of Bismuth.

BY C. H. WOOD.

Oxide of bismuth..... ʒ ix.
Citric acid..... ʒ xvi.
Strong solution of ammonia, fl ʒ xij. or q. s.
Water..... q. s.

To prepare the oxide of bismuth, a pound of the sub-nitrate of commerce is

boiled for five minutes in four pints of liquor potassæ, which must be free from carbonate. The oxide is easily washed by decantation, and must be dried at a moderate heat. It forms a dull lemon-yellow powder, having the formula Bi₂O₃ (Bi O₃).

To prepare the solution, dissolve first eight ounces of the citric acid in four fluid ounces of water, and carefully neutralize with solution of ammonia (about seven fluid ounces) mixed with half its volume of water. Then add the remainder of the citric acid, and when it has dissolved introduce the oxide of bismuth. Heat the mixture to near its boiling point for fifteen minutes, with frequent stirring; then add a pint of water and sufficient ammonia to dissolve the citrate of bismuth, and render the liquid slightly alkaline. Finally make up the measure of one gallon, and filter through paper.—*London Pharmaceutical Journal*.

Glycerole of Tannin.

R. Rother, in the *Chicago Pharmaceutist*, commends the following formula:—

Take of Tannin..... 8 troy ounces.
Glycerine..... 4 “ “
Strong alcohol.... 8 fluid “
Water..... 8 “ “

Mix the alcohol and water; add the tannin, and apply heat until the tannin has dissolved. Filter hot, then add the glycerine and evaporate by a careful heat until the solution weighs 16 troy ounces.

Macroton.

Dr. J. M. Lewis, in the *Georgia Medical Companion* of March 1st, states that he has found the following formula exceedingly useful in all cases of atonic functional derangement of the uterus. He calls it a *uterine tonic*:—

R—Macroton..... 40 grains.
Ferri sulph..... 60 grains.
M. et fiat mass, div. pil. No. 40.
S. One, two or three times a day.

Balsamic Cigarettes for Asthma, etc.

Soak strong unsized paper in a solution of saltpetre; this dry, and treat first with tincture of cascarrilla, and afterwards, when nearly dry, with compound tincture of benzoin; cut into squares of a suitable size, and roll into the form of cigarettes.—*London Chemist and Druggist's Compendium*.

Compound Arsenical Paper.

Take of Belladonna leaves... grs. xcvi.
Hyoscyamus " "
Stramonium "...ss grs. xlvij.
Ext. Opium..... grs. iv.
Tobacco..... grs. lxxx.
Boiling Water..... O.j.

Add

Potassa nit. grs. cxx.
Potass. arsenit. grs. cccxx.

Take thick bibulous paper; soak it in this solution, and allow to dry. When set on fire and the flame extinguished, this paper burns slowly without flame, and emits a dense smoke which may be inhaled for the relief of asthma, often with very marked benefit. It is also useful in chronic bronchitis.—*Receipt Book of Philadelphia Hospital*.

Treatment of Facial and Dental Neuralgia.

This method consists in turning into the meatus auditorius from four to ten drops (according to the age and sensibility of the patient) of the following fluid; then to close the opening of the ear by means of a little cotton, and to cause the patient to hold the head inclined for some minutes to the side opposite to the seat of pain, so that the liquid may remain in the bottom of the ear. This preparation is thus made:—

R.—Ext. opii,
Ext. belladonnæ,
Ext. stramonii..... ss parts j.
Aq. pruni virg..... " xij.
Solve et cola.

Although this preparation may be only extemporaneous, it may nevertheless be preserved, if care is taken to keep it cool, by pouring on its surface from two to four drops of sweet almond oil.

It is very rare, with the use of this liquid, that relief is not obtained in a few minutes, and the patient asleep in half an hour, whatever may have been the severity of the pains, and that without having been in the least danger. Absorption takes place almost as rapidly as from a denuded surface, and it is therefore unnecessary to blister the patient when we wish to use narcotics, since they act almost as rapidly by the auditory passage.

If it should happen that, at the end of eight or ten minutes, the pain does not yield to the remedy (which sometimes happens when the quantity used has been too small, or when we have to treat a neuralgia which has already required the use of narcotics in any way), it is necessary to use a second dose, at least equal to the first, but in the opposite ear, in order to obtain promptly that relief which is only too frequently momentary, of facial neuralgias of long standing.—*American Practitioner*.

Toothache.

The following formulas are commended by M. Magilot in *Lyon Médicale*, Jan., 1872:—

1. Take of Chloroform,
Sydenham's laudanum, ss 2 parts.
Tinct. benzoin..... 8 "

Mix.

2. Tincture of Aconite,
Liquor of Holland (C.
H. C C.)ss 2 parts.
Tincture of benzoin.... 8. "

Mix.

3. Take of Chloroform,
Creosote (or pure carbolic acid),
Sydenham's laudanum...ss 2 parts.
Tincture of benzoin 8 "

Mix.

These preparations, dropped on cotton, are to be put in the cavity of the tooth.

No. 3 is decidedly the most active. The benzoïn being precipitated by the saliva in the tooth, retains the active ingredients.

A mite of chloral put into the cavity and closely covered with a piece of white gutta-percha, or a pledget of cotton previously soaked in dammar varnish, is most efficient in toothache.

Treatment of Hemorrhoids of Pregnant Women.

Dr. Fordyce Barker, in *The American Practitioner*, recommends very highly aloes in hemorrhoids. He says: I give it, combined with other agents, according to the special indications of each case, and in such doses as I learn by experience of the peculiar idiosyncrasy of the individual is necessary to secure one easy, free, daily evacuation of the rectum. Some require a grain morning and evening, while in others a half grain is sufficient. In anæmic patients I combine the aloes with the sulphate of iron. In the two last weeks of gestation I always combine it with the extract of belladonna.* The following is a frequent prescription with me:

℞ Pulv. aloes soc. } ss ð j.
Sapo. cast. }
Ext. hyocyami. 3 ss.
Pulv. ipecacuan. gr. v.
M. Ft. pil. (argent.) No. 20.
S. One morning and evening.
When the patient is anæmic, I add to

the above one scruple ferri sulphat. Some ten days or two weeks before the supposed time of labor, I substitute the extract of belladonna, ten grains to one scruple, for the extract of hyoscyamus. When the hemorrhoids are associated with an irritable rectum, and frequent, small, teasing, thin evacuations, I substitute for the hyoscyamus a small quantity of opium, giving a smaller quantity of the aloes, as in the following formula:

℞ Pulv. aloes soc. }
Ext. opii aq. } ss gr. x.
Sapo. cast. }

M. Ft. pil. No. 20.

S. One morning and evening.

It is unnecessary for me to multiply formulæ, as the general principles by which I am guided will be sufficiently evident from the above.*

In some cases I have not been consulted, and have not known of the hemorrhoidal tendency of the patient until my attendance during labor. I have seen the hemorrhoidal tumors sometimes become very large during the labor. Dewees says: "Much may be done during labor to prevent a severe spell of piles by the accoucheur making a firm pressure upon the verge of the anus with the palm of his hand, guarded by a diaper, during the progress of the head through the external parts, and by carefully returning them after the expulsion of the placenta, as the sphincter is now fatigued, and will not oppose their descent." I have frequently tried this expedient, but I cannot say that it has been very successful, as the tumors soon come down again, and under these circumstances they are very apt to become strangulated, inflamed, and cause a great deal of suffering. When I find this condition of things, I have within a few years past adopted the plan of forcible dilatation, recommended by

* My friend and colleague, Prof. Wm. T. Lusk, has given me a memorandum from his note-book of the Clinical Lectures of the late Prof. Oppolzer, of Vienna, in 1866, which particularly struck him, as when a student he was familiar with my teaching on the subject. He says: "At the beginning of the hour Professor Oppolzer was wont to rapidly examine and prescribe for a large number of out-patients. Many of these were Polish Jews, drawn to Vienna by the great fame Oppolzer enjoyed in the treatment of hemorrhoids, an infirmity to which the Jews of that region, owing to sedentary habits, are specially liable. His prescriptions were, when piles are associated with constipation, aloes and quinine; without constipation, aloes and sulphate of iron. For bleeding piles:

℞. Ferri sulphat. scr. i.
Ext. aloes aq. dr. i.
Ext. taraxaci. q. s.
Ft. pil. No. 60.
S. One morning and evening, and increase to three a day if necessary."

* I will also add the following sentence from Dr. Chamberlain's *Remedial Medicine*, page 64: "Take, for example, aloes. It is a purgative, overmastering effete tissue; but what a bracing effect it has upon the mucous membrane of the lower bowel, restraining its over-secretion of mucus, and restoring the elasticity of the congested blood-vessels."

my friend and colleague, Prof. Van Buren. My method is this: the patient being fully under the influence of chloroform, I select the moment after the delivery of the child and before the placenta is brought away. I push back the tumors within the sphincter, if I can readily; if not, I leave them alone, and introduce both thumbs, back to back, well in the sphincter, and opening them as wide as possible I draw them through the sphincter. During this time I have firm pressure made on the uterus by an assistant, and in several instances the operation was followed by the sudden expulsion of the placenta from the vagina. I direct the following ointment to be applied twice daily to the tumors, and well up in the rectum:

R. Ung. gallæ co..... ʒj.
Ext. opii aq..... ʒj.
Sol. ferri persulph... 3j.

M. Ft. ung.

The result has been in every instance that the tumors have gradually disappeared, and the patients have had very little suffering from the operation.

When hemorrhoids come on after labor, the suffering is generally much greater than when it occurs during pregnancy. They are very often induced by the action of the purgative given two or three days after confinement.

It is now many years since I have been convinced that castor-oil was one of the worst agents that could be used as a laxative when there is a tendency to piles, as in many instances I have seen its action develop them. For many years I have annually spoken of this to the medical class before whom I have lectured, and I have received many letters from former students corroborating my statement by their own observation.

In those who have, or are predisposed to have, hemorrhoids, I give the following on the second day after confinement:

R. Magnesie sulph....
Magnes. carb.....
Potas. sup. tart....
Sulphur. sublim....
ss ʒ ss.

Mix thoroughly.

S. One, two, or three teaspoonfuls of the powder before eating in the morning.

Phosphate of Zinc.

Dr. J. Fred. Brown, of Dover, England, proposes in the *Pharmaceutical Journal*, the following formula:

Take of Sulphate of zinc..... 861 grains
Phosphate of sodium. 716 "
Acetate of sodium... 272 "
Boiling distilled water. 20 oz.

Dissolve the sulphate of zinc in four ounces of the water, and the phosphate and acetate of sodium in the remainder. Mix the two solutions, stir well together; let the precipitate subside; decant, and wash by decantation twice or thrice, then transfer to a paper filter, and wash with distilled water until the filtrate ceases to become turbid with a solution of chloride of barium; then dry on a water or sand-bath at a moderate heat. The product was a soft snow-white powder weighing 430 grains, 43 grains of which, when strongly heated in a porcelain crucible, were reduced to 35. The theoretical quantity of $Zn_3P_2O_8$ obtainable according to the subjoined equation is 385 grains; but the salt evidently retains three or four molecules of water when dried at a moderate heat, and their expulsion might be accompanied by decomposition of the phosphate into pyrophosphate—



Phosphate of zinc resembles in composition ferrous phosphate, and the mode of preparation is the same; acetate of sodium being added in each case to prevent the liberation of sulphuric acid.

Blennorrhagic Orchitis.

Take of Crystallized nitrate of silver..... 1 part.
Distilled water..... 100 parts.

Dissolve. Saturate and compress with this solution, and maintain it constantly applied to the affected testicle. Accord

To Cover the Taste of Turpentine.

I have found that glycerine will in great measure cover the taste of turpentine in emulsion. The following formula may be employed:—

B Ol terebinth..... f 3 ii.
Glycerine..... f 3 ii.
Mucil. Acacia..... f 3 ii.
Ol gaultherine..... gtt. xviii.
Syrup q. s. ad..... f 3 vi.

M. et ft. emuls.

S. Dose—A tablespoonful.—*Ed. New Remedies.*

Cod-Liver Oil Emulsion.

Take of—

Tragacanth..... 8 parts.
Cold water..... 500 “

Make into a mucilage.

This, by being simply agitated, makes with cod-liver in all proportions a homogeneous mixture, which may be rendered more agreeable by the addition of 4 parts of alcohol with a little oil of bitter almonds and a trace of oil of cinnamon to every 80 parts.—*Journ. de Pharm.*, April, 1872.

Dust-Powder for Infants.

Take of—

Starch..... 3 i.
Oxide of zinc..... 3 ij.

S. Use with a brush.

Solution for Disinfecting Sponges.

Take of—

Permanganate of potash 4 parts.
Water..... 100 “

Impregnate the sponge in this, and afterwards wash in a quart of a solution of sulphurous acid (25 parts to 100), afterwards wash plentifully with water.

According to M. Leriche, foul purulent sponges so treated regain their pure, marine odor, their elasticity, and become softer and whiter.—*L'Union Pharmaceutique*, May, 1872.

Syrup of Eucalyptus.

Take of—

Leaves of eucalyptus... 100 grms.
Boiling water..... 1 litre.

Infuse for six hours and express; allow to stand and deposit; decant the liquid, and to it add 190 parts (by weight) of sugar for every 100 parts, dissolving by gentle heat.—*L'Union Pharmaceutique*, June, 1872.

Powder Stomachique.

Take of—

Powdered rhubarb... 3 grms.
Prepared chalk..... 8 “
Powdered opium... 25 centigr.

Mix and divide into 12 packets.

One powder half an hour after meals.

—*L'Union Médicale.*

Syrup of Chloroform.

Take of Pure chloroform..... 5 parts.

Rectified alcohol..... 24 “

Simple syrup..... 800 “

Mix the chloroform and alcohol and add the syrup and shake.

Dose. A tablespoonful.—*L'Union Médicale.*

Del Fraissé Revulsive Lini-ment.

Take of Oil of turpentine..... 30 parts.

Tartar emetic..... 4 “

Mix.

Frictions 3 or 4 times a day in rheumatic and neuralgic pains, until an eruption is induced.—*L'Union Pharmaceut.*

Formulas for Hypodermic Use.

Crystallized Digitalin.

Take of—

Digitaline (crystal.)... 1 centigr.

Alcohol at 95°..... 5 cubic centigr.

Dissolve and add —

Distilled water..... 5 cubic centigr.

One cubic centimetre contains 1 milligramme of digitalin.

Codeia.

Take of—

Crystallized codeia. 1 grm.
 Dilute sulphuric acid (10th). 150 grms.
 Distilled water with glycerine (5 parts of latter to 100) enough to make
 100 cubic centimetres.

—Adrian—*L'Abeille Médicale*.**Injections of Ergot in Maladies of the Uterus.**

Dr. Swideski, in a recent memoir, collects about forty cases in which subcutaneous injections of ergot were employed in various diseases of the womb, especially chronic metritis, in some displacements and in metrorrhagia; its action was in every case prompt and certain. The author used at first the solution of Beaujean, and observes that, as the solution contains a larger quantity of alcohol, it acts more promptly, but excites greater pain, and frequently produces ulcers. The solutions employed are:—

1. Extr. aqu. secal. cornut. 2 grms.
 Spir. vin. rectific.,
 Glycerina, ss. 7 "
2. Extr. aqu. secal. cor. 2 grms.
 Spt. vin. rectific. 5 "
 Glycerina. 12 "
3. Extr. aqu. secal. cor.,
 Spt. vin. rectific., ss. 2 grms.
 Glycerina. 12 "
4. Extr. aqu. secal. cor. 1 grms.
 Spt. vin. rectific. 1 "
 Glycerina. 8 "
 Aq. destil. 4 "

In cases of chronic ulceration he employs solutions 3 and 4; where prompt action is needed, Nos. 1 and 2; the former (Nos. 3 and 4) act in from one to two hours, the latter excite painful contractions in about half an hour. In some of the deviations of the womb the author reports the favorable results of the use of subcutaneous injections of ergot; he observes, however, that it is of no benefit if the case be of too long standing, if the uterus present considerable inflamma-

tion, or adhere to other organs in the vicinity. In chronic metritis the injections are employed every two or three days, and even where a complete cure cannot be hoped for, the leucorrhœa speedily ceases, and the uterus returns to its place.—*Gazetta Med. Ital. Lombard.*, 1872, No. 4.

Goldsmith's Solution of Bromine.

Bromide of potassium. 160 grains.
 Bromine. 3 j.
 Water. 3 vij.

Mix. The above is the formula used by Dr. Goldsmith.—*Druggists' Circular*.

Snow Catarrh Powders.

℞ Sulphate of potassa,
 Chlorate of potassa,
 Gum acacia, equal parts of each and
 mix.

Remedy for Sore Lids, Breasts, etc.

℞ Glycer-amy. 2 drachms.
 Bromo-chloral. 5 "
 Mix.—*Druggists' Circular*.

Remedy for Styes.

℞ Glycerine. 4 ounce.
 Bromo-chloral. 10 ounces.
 Rose-water. 1 drachm.
 Brandy. 4 "
 Mix. —*Druggists' Circular*.

Compound Elixir of Mandrake.

℞ Mandrake,
 Senna leaves, ss. 64 scruples.
 Jalap. 32 "
 Cloves,
 Cinnamon, ss. 1 scruple.
 Cardamom,
 Aniseed, ss. 2 drachms.
 Alcohol. 5 ounces.
 Water. 9 "
 Simple syrup. 8 "

Bruise the roots, leaves, and aromatics,

and moisten with the alcohol and water (previously mixed); pack into a percolator, and pour the alcohol and water on it until 18 fluid ounces have passed; mix this with the syrup, filter, and add on the filter a sufficient quantity of water to make it measure one pint. Each fluid drachm contains 10 grains of mandrake, 10 grains of senna, 5 grains of jalap.—*Druggists' Circular.*

Bay Rum.

1. Formula much employed in the West Indies.

℞ Fol. myrti acris..... 2 pounds.
Sem. cardamomi..... $\frac{1}{2}$ pound.
Cassie cinnamomi.... 2 ounces.
Caryophylli..... $1\frac{1}{2}$ "
Rum..... 9 quarts.

Distil $1\frac{1}{2}$ gallons.

2. Probably the best Imitation.

℞ Oil of bay..... 10 fl. drachms.
" of pimento... 1 fl. drachm.
Æth. acet..... 2 fl. ounces.
Alcohol..... 3 gallons.
Water..... $2\frac{1}{2}$ "

Mix, and filter after a fortnight.

3. ℞ Olei pimentæ..... $\frac{1}{2}$ ounce.
" caryophylli... 15 drops.
" macia..... 15 "
" roris marini... 14 "
Alcohol..... 8 ounces.

Agitate thoroughly and add

New rum..... 8 ounces.

Tinct. of santal,

" of curcum. q. s.

to give a good color. After standing several days, to be filtered.—*Druggists' Circular.*

Syrupus Cimicifugæ Comp.

Take of Black snakeroot, in fine powder..... $\frac{1}{2}$ i.

Senega root in fine powder..... $\frac{1}{2}$ m.

Ipecac root, in fine powder..... $\frac{1}{2}$ ij.

Calabria Scoria in fine powder..... $\frac{1}{2}$ ij.

Syr. wild cherry bark. U. S. P..... $f\frac{1}{2}$ vj.

Dissolve the licorice in eight fluid ounces of boiling water; when cold add to it eight fluid ounces of alcohol; moisten the actæa, senega, and ipecac with one fluid ounce of the mixture, and pack firmly in a cylindrical percolator; pour upon it the alcoholic mixture; after the liquid has disappeared from the top, displace with water sufficient to make the percolate measure one pint; evaporate this to six fluid ounces, boil and filter, adding sufficient water through the filter to make the liquid measure twelve fluid ounces, with twenty-three troy ounces of white sugar, make into a syrup, and when cold add the syrup wild cherry bark.—*Druggists' Circular.*

Elixir of Pepsin, Bismuth, and Strychnia.

℞ Pepsin (Hawley's)... 256 grains.
Bismuth citrat..... 64 "
Strychnia..... 1 grain.
Aq. flor. aurantii... 6 ounces.
Spirit. vini, deod... 2 "
Aque..... 4 "
Glycerine (pure)... 2 "
Syrupi..... 2 "

Triturate the pepsin with the water and glycerine and filter; dissolve the bismuth in two ounces of orange flower water with a few drops of aqua ammoniac. Dissolve the strychnia with a few drops of acetic acid. Add the bismuth solution to the pepsin, then the remainder of the fluids, and finally the solution of strychnia. Each fluid ounce contains: pepsin, sixteen grains; citrate of bismuth, four grains; strychnia, one-sixteenth of a grain.—*Druggists' Circular.*

Veratria as a Parasiticide.

Dr. Eugene Perregue recommends in *The American Journal of Syphilography and Dermatology* for July, the application of the following lotion in cases of *trich versicolor*, *favus*, and *aspergillus*:—
℞ Veratrina (caladilla) gr. ii; acidi

acet. dil., ℥ x.; aq. rosa., glycerinæ, ss. ʒ ss. M. The tinctures of veratrum viride and veratrum album also possess parasiticide properties.

Pulvis Glycyrrhizæ Comp., or Pulvis Pectoralis Kurellæ,

According to the *Prussian Pharmacopœia*, is prepared as follows:

℞ Senna leaves, powdered,
Licorice root, powdered, ss. ʒ vj.
Fennel seeds, powdered,
Pure sulphur, powdered, ss. ʒ iij.
Refined sugar, powdered, . . . ʒ xvij.
Mix. —*Druggists' Circular.*

Infantile Paralysis.

Prof. Gross ordered at the clinic for a pale, diseased stunted child suffering from infantile paralysis:—

℞ Tinct. ferri chloridi, f ʒ j.
Tinct. nucis vomicæ, f ʒ ij.
Hydrargyri chlorid. corrosiv., gr.
iv. M.

S. Take five drops three times daily in a tablespoonful of sweetened water.

℞ Ung. hydrargyri, ʒ iij.
Cerat. simplicis, ʒ v.
Veratriæ, gr. vj. M.

S. Put a piece the size of a marrowfat pea, twice a day, over the entire spine and along the back of the limbs.

Apply the ointment gently at first, until the parts become accustomed to its use. Wash the child every day with tepid water containing a tablespoonful of common salt to the quart. After bathing, wring the end of a towel out of cold water, and with it strike the entire surface of the body quite smartly, until the skin is reddened. This treatment to be continued for a month; at the end of which time his mother was directed to bring the child back.

New Method for Preparing Lin. Sapo.

J. A. Graefie (*Am. Jour. Pharm.*) proposes the following modification of the

U. S. process, yielding a clear liniment in the course of a few minutes:—

Dry White Castile Soap (finely
grated) ʒ iv.
Camphor ʒ ij.
Oil of Rosemary fl ʒ ss.
Water fl ʒ vj.
Alcohol fl ʒ xxx.

Put the soap in a half-gallon bottle, pour on a pint of alcohol, shake well, add the water and shake again till the soap is dissolved.

Dissolve the camphor and oil in the remaining alcohol, mix the two solutions and filter.

Balsam of Honey.

(1) Balsam of tolu 1 pound.
Honey 1 "
Alcohol 1½ gallons.

Or,

(2) Balsam of tolu 2 ounces.
Styrax 2 "
Opium ¼ drachm.
Honey 8 ounces.
Alcohol 2 pints.

Oil of Spike.

Barbadoes tar 2 pints.
Ol. terebinth 1 pint.
Ol. lini 1 "
Ol. lavand. exot. 2 oz.

British Oil.

Ol. terebinth 1 pint.
Ol. lini 1 "
Barbadoes tar 1 "
Crude petroleum 8 oz.
Ol. succini (or juniper) 1 oz.

—M. R. BARKER, *Canad. Pharmacist.*

Other receipts:—

Oil of Spike.

Barbadoes tar 2½ pints.
Spirits turpentine 4 "
Sulphuric acid 8 ounces.

British Oil.

Barbadoes tar.....3 pints.
Oil of amber.....1 ounce.
Spirits turpentine.....6 pints.

—*Canada Pharmacist.*

Syrupus Cubebe.

C. L. Mitchell (*Am. Jour. Pharm.*) proposes the following formulæ for the preparation of a syrup of cubebs which has been found an elegant as well as efficacious remedy in diseases of the throat and lungs:—

Fld. ext. cubebs.....f ʒ ij.
Carb. magnesia.....f ʒ ss.
Sugar powd.....ʒ xij.
Orange-flower water.....f ʒ ij.
Water.....q. s.
Ess. oil almonds.....gtt. j.

Rub up the fld. ex. with the carb. magnesia and then add ʒ ij. of the powd. sugar in small portions. When thoroughly mixed add gradually first the orange-flower water and then f ʒ vij. water, constantly triturating the mixture until the sugar is dissolved. Filter and add q. s. water through the filter to measure f ʒ xj., in which dissolve the balance of the sugar without heat. Add the oil almonds cut in a little alcohol, and again filter, adding, if necessary, q. s. water through the filter to measure 1 pt. The dose of this syrup is f ʒ j-iv., and it may be given in even larger doses if desired. It may also be made by using the official oleoresin in the proper proportion in place of the fluid extract.

Pyrosis.

Dr. Thompson (*Amer. Pract.*) says:—

In the treatment of pyrosis or water-brash, the antacids are to be resorted to, particularly the saccharated solution of lime-water and milk—

R. Liquefactio carbonat. f ʒ i-iv.

Lactia ad.....ʒ i-iv. M.

It may be well to remember that the addition of these grains of carbonate of soda to the quart of milk not only

prevents it from turning sour, but renders it more digestible.

Antacid for Heartburn.

R Potassæ subcarbonat. (ss ʒ ij.
Spir. lavand. comp. }
Sacchar. alb. ʒ j.
Tinct. opil. gtt. xxx.
Aqua..... ʒ lllss.

M. S. Tablespoonful as required.

—Dr. B. S. Thompson, *American Practitioner.*

Gonorrhœal Ophthalmia.

The following is the treatment of a very severe case of gonorrhœal ophthalmia adopted in the Meath Hospital, Dublin, by Mr. L. H. Ormsby:—

On March 25th the patient was put to bed and put on low diet, all stimulants stopped, and the emetic cathartic mixture ordered, as he was a plethoric, strong young fellow, containing

R Antimonii tartrat. gr. j.;
Sulph. magnesia..... ʒ j.;
Aque..... ad ʒ viij.

Two tablespoonfuls of this mixture every third hour, until the bowels are well moved.

Two leeches were ordered to be applied on the internal and external canthus of the eye, and a solution of nitrate of silver containing two grains to the ounce, to be injected into the eye every hour. A belladonna lotion to be applied to the eyelid to soothe the pain, and directions given to the patient to lie on the affected side to prevent any of the gonorrhœal matter flowing across the bridge of the nose into the other eye: the diseased portion of conjunctiva was cauterized by Mr. Ormsby on two occasions with marked benefit, and in the course of the case the leeches were repeated with great effect. The gonorrhœal conjunctiva was painted with a one-grain solution of nitrate of silver to the ounce every twenty-four hours. On the 10th of April the inflammation was at its height the vision was greatly lost, the patient could not see anything with

it; in about a week longer, signs of the inflammation subsiding were evident, he was then ordered

R Iodide potass. gr. 40;
Tinct. cinchon. co. $\frac{3}{4}$ j.;
Syrup. aurant. 5 ij.;
Decoct. cinchon. ad $\frac{3}{4}$ viij.

Two tablespoonfuls thrice daily.

The eye from this went on remarkably well, the inflammation subsided rapidly, and all danger of sloughing of the cornea disappeared, the cornea began to clear, and he could distinguish objects. He left the hospital well on the 6th of May, 1872. —*Med. Press and Circular*, June 12.

Enlarged Testicle.

Dr. D. Hayes Agnew used the following for indolent enlargement of the testicle, supposed to be strumous.

The man was ordered to take $\frac{3}{4}$ ss. ol. morr., with gt. xv. syr. ferri iodidi after each meal; also, arsen. iodidi gr. 1-18 t.

d. Locally to apply

R Ext. bellad.,
Ung. hydrarg.,
“ iodine,
“ adipis, aa 3 ij. M.

If the ointment irritates the skin, it may be further diluted.—*Med. and Surg. Reporter*.

Solution for Erysipelas (Trousseau).

Take of sulphuric ether... 60 parts.

“ camphor..... 30 “

Dissolve.

This solution is to be applied by means of a little tuft of charpie upon the erysipelatous (erythematous?) surface of new-born children.—*Union Méd.*

Ricord's Resolvent Plaster.

Take of

Plaster of vigo and

Plaster of hemlock, each 10 parts.

Extract of opium..... 1 part.

Mix and make into a plaster. To be

used locally in subacute buboes and orchitis.—*Union Méd.*

Formula for Dyspepsia of Debauchees.

Dr. James R. Wood's formula is commended by Dr. B. S. Thompson, *American Practitioner*, July, 1872. It is as follows:—

R Tinct. valerian aromat. } aa $\frac{3}{4}$ ij.;
Lupulin..... }
Tinct. cardamom..... $\frac{3}{4}$ ss.

M. S. A teaspoonful as required.

Gun Cotton and its Preparation.

BY CHARLES H. MITCHELL.

A number of experiments were tried, with a view of ascertaining the relative proportions of cotton and acids, together with the proper time for maceration necessary to produce a cotton which should combine the largest yield with the highest explosive power and solubility. The following formula was at length adopted:

Raw cotton..... 2 parts.
Carbonate potassa..... 1 “
Distilled water... 100 “

Boil for several hours, adding water to keep up the measure; then wash until free from any alkali, and dry. Then take of:

Purified cotton..... 7 oz. av.
Nitrous acid,* a. g. 1.42... 4 pta.
Sulphuric acid, “ 1.84... 4 “

Mix the acids in a stone jar capable of holding 2 gals., and when cooled to about 80° Fahr., immerse the cotton in small portions at a time; cover the jar and allow to stand 4 days in a moderately cool place (temp. 50° to 70° Fahr.). Then wash the cotton, in small portions, in hot water, to remove the principal part of the acid; pack in a conical glass percolator, and pour on distilled water until the washings are not affected by sol. chloride barium; drain and dry. Yield, 11 oz. av.

* Nitric, saturated with nitrous acid.—*Ed. Amer Journ. Pharm.*

This cotton is perfectly white, of a harsh, gritty fibre, very explosive, leaving scarcely any ash, soluble in ether, ether fortior, acetic ether, glacial acetic acid, and in mixture of alcohol and ether, varying from 1 part ether to 3 parts alcohol to pure ether itself. If a cotton superior to this is desired, it may be obtained by treating this cotton with an additional proportion of the mixed acids, washing and dry as before. The cotton gains about one per ct. in weight, becomes perfectly soluble, and is so free from any ash as to scarcely scorch a sheet of white paper it may be burnt on. Both this and the previous gun cotton may be ignited on gunpowder without exploding it. The advantages claimed for this cotton over that of the U. S. P. are that it is perfectly soluble, very explosive, cheap, its manufacture is much more easy, requiring but little time and attention, and turning out a superior product with large yield and less cost.

The subject of collodion next claims our attention, it being the most important pharmaceutical preparation of gun cotton. The applicability of gun cotton, in ethereal solution, to the dressing of wounds, inflamed surfaces, etc., was first made known by Dr. Horace Maynard, of Boston. Its valuable properties soon commanded attention, and at once supplied a want long felt in the medical profession. No better formula for collodion can be found than that of the U. S. P. Using the cotton prepared as before mentioned, it left nothing to be desired.

Collodion can also be made the vehicle for other medicines. Those remedies which are used externally, of course, can only be administered in this manner. Having made a number of experiments on this subject, I present the following formulæ, several of which I think are new:

Styptics.

Styptic Collodion.

℞ Tannin..... ʒ ij.
Stronger alcohol..... f ʒ iv.

Stronger ether..... f ʒ xii.
Soluble cotton..... 3 j. ʒ ij.
Canada balsam..... 3 j.

Introduce the cotton into a suitable bottle, pour on it 2 fluid ounces of alcohol, shake well; then add 10 fluid ounces of the ether, agitate frequently until dissolved. Dissolve the tannic acid in a mixture of the remainder of the alcohol and ether, mix with the first liquid, add the balsam, allow to stand until clear; then pour off.

Collodion with Sesquichloride of Iron.

℞ Sesquichloride of iron. 3 j. grs. iv.
Stronger alcohol..... f ʒ iv.
“ ether... . f ʒ xij.
Soluble cotton..... 3 j. grs. iv.

Into a suitable bottle introduce the cotton, pour on 2 fluid ounces of the alcohol, and shake well; then add the ether, and agitate frequently until dissolved. Dissolve the sesquichloride of iron in the balance of the alcohol; mix with the prepared collodion.

Anodynes.

Collodion with Aconite.

℞ Pulv. aconite root... ʒ j.
Ether..... f ʒ ij.
Soluble cotton..... 3 j. grs. iv.
Stronger alcohol..... q. s.

Mix the ether with 2 fluid ounces of alcohol, moisten the aconite with 1 fluid ounce of this, pack in a percolator, and percolate with the balance, pouring on q. s. alcohol to recover 8 fluid ounces, in which dissolve the cotton.

Collodion with Belladonna.

℞ Powdered belladonna
root..... ʒ ij.
Ether. f ʒ vj.
Alcohol..... q. s.
Gun cotton..... 3 j. grs. iv.

Mix the ether with 2 fluid ounces of alcohol, moisten the belladonna with 1 fluid ounce of this, pack in a percolator and percolate with the balance, pouring

on *q. s.* alcohol to recover 8 fluid ounces, in which dissolve the cotton.

Antiseptics and Disinfectants.

Collodion with Carbolic Acid.

℞ Carbolic acid..... 3 j.
Ether..... f 3vj.
Stronger alcohol.... f 3ij.
Gun cotton..... 3 j. gra. iv.

Dissolve the gun cotton in the ether and alcohol mixed, and then add the carbolic acid.

Collodion with Sulpho-carbolate of Zinc.

℞ Sulpho-carbolate of zinc 3 j.
Ether f 3vj.
Stronger alcohol..... f 3ij.
Gun cotton..... 3 j. gra. iv.

Introduce the cotton into a suitable bottle, add 1 fluid ounce alcohol, shake well; add the ether, and agitate frequently until dissolved. Dissolve the zinc salt in the balance of the alcohol, and mix with the prepared collodion.

Collodion with Thymol.

℞ Thymol..... 3 j.
Ether..... f 3vj.
Stronger alcohol.... f 3ij.
Gun cotton..... 3 j. gra. iv.

Dissolve the cotton in a mixture of ether with part of the alcohol, dissolve the thymol in the balance of the alcohol, and mix.

Stimulants in Cutaneous Diseases.

Collodion with Iodide of Mercury.

℞ Mercuric iodide..... 3 j.
Potassium iodide.... 3 ss.
Alcohol..... f 3iv.
Ether..... f 3iv.
Gun cotton..... 3 j. gra. iv.

Triturate the iodides together in a mortar, add the alcohol boiling, and rub until they are completely dissolved. Then add the gun cotton, lastly the ether, and agitate frequently until the cotton is all dissolved.

Stimulants and Rubefacients.

Collodion with Arnica.

℞ Pulv. arnica..... 3 iv.
Ether..... f 3xij.
Stronger alcohol... q. s.
Gun cotton..... 3 ij. gra. viij.

Mix the ether with 4 fluid ounces alcohol. Moisten the arnica with *q. s.* of this, pack in a percolator, and pour on the balance, following with alcohol until 16 fluid ounces of tincture have been recovered; to this add the cotton, and agitate frequently until dissolved.

Collodion with Capsicum.

℞ Grd. capsicum..... 3 iv.
Ether..... f 3xij.
Stronger alcohol..... q. s.
Gun cotton..... 100 gra.

Proceed as in collodion with arnica, recovering 16 fluid ounces of tincture, in which dissolve the gun cotton.

Collodion with Mezereon.

℞ Mezereon..... 3 iv.
Ether..... f 3xij.
Alcohol..... q. s.
Gun cotton..... 128 gra.

Mix the ether with 4 fluid ounces of strong alcohol, and in this allow the mezereon to macerate one week. Drain, pack tightly in a conical percolator, pour on the separated liquid, and follow with enough alcohol to recover 16 fluid ounces of tincture, in which dissolve the cotton.

Collodion with Savin.

℞ Powd. savin leaves..... 3 iv.
Ether..... f xij.
Alcohol..... q. s.
Gun cotton..... gra. 128.

Proceed in same manner as in collodion with capsicum.

Collodion with Black Pepper.

℞ Grd. blk. pepper..... iv.
Ether..... f 3xij.
Alcohol..... q. s.
Gun cotton..... 128 gra.

Proceed in the same manner as in collodion with capsicum.

Vesicants.

Collodion with Cantharides.

℞ Powd. cantharides ʒ iv.
Ether f ʒ xij.
Stronger alcohol q. s.
Gun cotton 80 grs.

Moisten the cantharides with a small portion of the ether, and pack in a conical percolator. Then pour on the balance of the ether, mixed with 4 fluid ounces alcohol, and follow with enough alcohol to recover 16 fluid ounces, in which dissolve the gun cotton.

These collodions can be used as substitutes for many of the officinal plasters, having the advantage of occupying a small bulk, ready adaptability to any surface, and powerful therapeutic action.

I have endeavored, as far as possible, to give some practical information on a branch of pharmacy of which comparatively little is known. The subject is, I think, an important one, since gun cotton and collodion occupy a high position in both medicine and the useful arts, and to its elaboration and useful application too much study cannot be devoted.—*Am. Journ. of Pharm.*

Churchill's Iodine Caustic.

By the kindness of Dr. William Neergaard we are able to give the formulæ as follows:—

"Churchill's iodine caustic is composed of 'Iodine, one drachm; Iodide of potassium, two drachms; Water, half a fluid ounce. Mix.'

"This mixture will be seen to be more than five times the strength of liq. iodinii co. of the U. S. Pharmacopœia, which it otherwise resembles.

"Churchill's compound tincture of iodine is: 'Pure iodine, two and a half ounces; iodide of potassium, half an ounce; alcohol, four fluid ounces; rectified spirit of wine, twelve fluid ounces. Mix them.'"—*New York Medical Journal.*

Prof. Gross's Treatment of Goitre.

Treatment will consist in stimulating

the absorbent vessels, although the application of agents of too stimulating a character must be avoided, otherwise irritation will be produced, and the mass will be enlarged instead of diminished. The neck will be thoroughly washed at least once in the twenty-four hours with hot water and soap, and immediately afterwards a portion of the following ointment will be applied to the surface of the tumor and well rubbed in:—

℞ Ung. hydrarg. biniodid. . . . 3 j.;
Ceratsimp. 3 vj. M.

The patient will take internally the *Liquor iodinii compositus*, gtt. viij., in sweetened water, three times daily.

A piece of thin flannel and oiled silk will be worn around the neck. The diet will be regulated and all red meats avoided. Six grains of blue mass in combination with a grain of ipecac will be given now and then at bedtime to regulate the secretions.

Preparation of a very Active Cantharidal Plaster.

BY PROF. G. DRAGENDORFF (Dorpat, Russia).

Apothecaries frequently complain that some cantharides do not furnish an active blistering plaster; that the same furnish, even when treated with acetic ether, an extract so poor in cantharidin, that with its aid no good Druott's blistering tissue can be produced. In most cases the opinion is expressed that the flies contain too small a percentage of cantharidin. My experience teaches me to discredit the latter opinion. It is possible to obtain good preparations even from such apparently poor cantharides, it being only necessary to thoroughly extract the cantharidin they contain.

A few observations show how poorly this is commonly accomplished. According to my experience the amount of cantharidin in Spanish flies varies from 0.27 to 0.5 per cent. The coating of a vesicating tissue 20 c. m. long and 12 wide, requires about 25 grm. plaster substance,

containing usually about 6 grm. powdered Spanish flies, furnishing at least 0.016 cantharidin. 0.00002 grm. cantharidin suffice for a blistering surface of a square centimetre, or 0.0048 grm. for 240 square centimetres, or less than one-third of the smallest quantity that may be considered present in the plaster. Mechanical causes may partly be found to be the ones that prevent a thorough action of the plaster. A plaster of poor adhesiveness, not being in close contact with the epidermis, does not act because that close contact is wanting which is necessary for the absorption of the cantharidin. It is also a mistake of several pharmacopœias to permit the use of coarsely-powdered cantharides, the quantity of cantharidin in which is not uniformly distributed in the plaster, even if the powder is heated for a long time with the oil.

Other causes, unnoticed heretofore, also weigh heavily in this direction. The cantharidin is present in the Spanish flies in several different combinations, in which it is firmly held. This fact I have mentioned already in my "Contributions to Toxicological Chemistry," on the different behavior of flies towards various solvents. Cantharides with about 0.3 per cent. of cantharidin yield to water, even after repeated boiling with fresh portions of the same, only about half of their cantharidin, while the remainder is only yielded to potassa lye. In the same manner, alcohol, chloroform, and ether dissolve only 30 per cent. of the blistering substance. If all the cantharidin is to be extracted, bases like potassa or soda

must be employed, which form easily soluble salts with the cantharidin. Together with Masing, I demonstrated years ago that the salts thus formed are energetic blistering agents. During the past two years reference has occasionally been made to our observation, especially by Delpech and Guichard, recommending the cantharidates of soda and potassa as vesicants.

Without alluding to this further, I would say that by the aid of soda or potassa the entire amount of cantharidin contained in the flies may be rendered active. The finely-powdered flies are mixed to a paste with diluted alkaline lye of about 1.1 sp. gr., heated in water-bath for twenty-five to thirty minutes, when sufficient muriatic acid is added to have a trifling surplus of the same, and the whole mass is dried rapidly in the water-bath. The residue, which we may call "prepared cantharides," is powdered anew and employed for the preparation of the plaster, or for the extract with acetic ether for use upon tissue. The small quantity of potassium or sodium chloride present is in no case injurious. The cantharidin is now present in the mixture in a free state. In a drug store in this city, where my proposition has been followed, no complaints have been made about the preparation.

Even for the preparation of the pure cantharidin, the above-mentioned process is worthy of attention. As I mentioned before, ether, alcohol, etc., dissolves from the cantharides, not "prepared," only a fraction of the cantharidin present.—*The Chicago Pharmacist.*

Resinous Syrup of Tolu—and Syrup of Tar.

M. Latour proposes the following formula as retaining the resin in Syrup of Tolu:—

Take of	Balsam of Peru....	100 parts.
	Sugar.....	300 "
	Gum Senegal.....	100 "
	Water.....	600 "
	Syrup.....	2400 "

Triturate the balsam carefully in a porcelain mortar with the powdered gum Senegal and the sugar, until an intimate finely pulverized mixture results. Heat this in a copper vessel to 100° C., and add a sufficient quantity of syrup, previously diluted with its proportion of water; triturate with care, continuing the heat, and when the tolu is sufficiently emulsified, mix the boiling syrup little by little.

A tablespoonful of this syrup contains 15 grains of the balsam.

Take of—

Tar (previously washed with boiling water)	100 parts.
White sugar.....	600 "
Gum Senegal (powder'd)	100 "
Water.....	400 "
Syrup.....	3000 "

Mix and triturate as in the previous process.

A tablespoonful contains 15 grains of the tar.

By mixing the syrup of tar and the syrup of tolu in equal quantities, a preparation is obtained which is better tolerated than the simple syrup of tar.—*L'Union Pharmaceutique*, Jan. 1873.

Aromatic Tincture of Arnica.

BY DR. DELIOUX DE SAVIGNAC.

Take of

Bruised bay-berries.....	15 grammes.
Flowers of arnica	25 "
" of lavender.....	10 "
" of chamomile.....	10 "
Leaves and tops of thyme.....	10 "
" " pepperm't.....	10 "
" " sage.....	10 "
" " balm	10 "

Brandy (proof spirits)..... 1 litre.

Macerate for five hours, express strongly, and filter.

The quantities are for dried herbs.

If the latter be used fresh, double the quantity must be employed, and alcohol at 90° must be substituted for the spirit.

This preparation is very useful in all forms of chronic muscular pain, whether rheumatic, from sprain, fatigue, age, or other causes. It should be used with continuous frictions with a piece of flannel or a woollen glove.

Sometimes the remedy is made more efficient by the addition of 5 to 10 parts of camphor to the 100. It may be used internally in doses of 2 to 4 teaspoonfuls given unsweetened, in cases of shock from wounds, or wherever a simple cordial and stimulant is needed. A simpler but less elegant and efficient preparation may be made domestically by taking 15 grammes each of dried chamomile, lavender, thyme, mint, sage, and balm, and adding 1 litre of ordinary spirit to them. The above formula, however, produces in the hands of a good pharmacien a much better preparation.—*L'Union Pharmaceutique*, September, 1872.

Vermifuge Powder.

The following, by Bouchut, is recommended especially for lumbricoid worms, in *L'Union Médicale* for September 28, 1872:

Take of Calomel.....	2 grs.
Santonine	1.5 grs.
Powdered sugar of milk.....	1.5 grs.

Mix. Give before breakfast in a tablespoonful of honey, to a child about two years old.

To Get Rid of Body-lice.

Dr. W. T. Carter recommends the following in the *American Practitioner* for October, 1872.

℞ Corrosive sublimate.....	gr. xij.
Alcohol	3 iv.
Oil of bergamot.....	℥ vj.
Mix and add water....	℥ ijss.

This solution should be thoroughly applied to every part of the body infested, taking care that every insect is reached by it. The first application will, in the majority of cases, cause the death of every accessible louse; but it should be continued twice daily for at least one week, in order that none may escape. It will generally be found necessary, where lice have set up an eczema of the scalp, to cut the hair short, in order to expose every retreat of the insect; and even where alcohol or dilute acetic acid, as recommended by Hebra, are used to destroy the nits, I have found the cure greatly expedited if the solution of the bichloride be employed in conjunction with the above agents. When the pubis is the part affected, the solution should be briskly rubbed in upon the scrotum, perineum, pubes, and about the anus. If

body-lice are present, the clothes should either be destroyed, or be boiled or exposed to a temperature of 150° F. Such lesions as may remain after the destruction of the vermin are to be treated according to their character.

Syrup of Eucalyptus.

Take of Distilled water of eucalyptus.....500 parts.
White sugar.....950 "
Dissolve and filter.—*L'Union Pharmacéutique*.

Tincture of Eucalyptus.

Take of Dried leaves of eucalyptus (cut up).....1 part.
Alcohol, at 80°.....5 "
Allow to macerate for ten days, then filter.—*Ibid*.

Wine of Eucalyptus.

Take of Dried leaves of eucalyptus..... 80 parts.
Alcohol at 60°..... 60 "
Good white wine...1,000 "

Allow to macerate in the alcohol for twenty-four hours, then add the wine; after ten days, filter.—*Ibid*.

Hydro-Alcoholic Extract of Eucalyptus.

Take of Dried eucalyptus leaves (cut up). 1,000 parts.
Water..... 8,000 "

Distil to obtain the essential oil; make an aqueous extract of the material remaining in the apparatus, and to it add alcohol at 60°, 1,000 parts.

Filter the alcoholic solution and evaporate it to the consistency of an extract; when nearly cold, mix the volatile oil thoroughly with it.—*Ibid*.

Ointment for Tinea.

Dr. Robinson suggested a prescription in the treatment of tinea capitis and eczema, which he has used with much success.

R Liquid tar..... ʒ i.
Oint. nit. mercury..... ʒ ij.

Mix.

S. Apply in thin plaster every third day. Dr. Robinson gives Fowler's solution for a while after the local trouble is relieved.—*Proceedings Kentucky Med. Soc.* 1872.

Syrup of the Lacto-Phosphate of Lime.

For this the *Chemist and Druggist* gives this formula:

R Concentrated lactic acid.... f ʒ i.

Magma of freshly precipitated phosphate of lime, as much as will dissolve.

Orange-flower water..... f ʒ iss.

Water up to..... f ʒ viii.

White sugar..... ʒ xi.

Mix the lactic acid with two ounces of water, and saturate it with the magma. Put the liquid upon a filter, and add the rest of the water until eight fluid ounces of filtrate are obtained. Pour this upon the sugar contained in a bottle; shake occasionally until solution is effected, and strain. No heat ought to be applied, else the syrup assumes a milky appearance. The syrup thus prepared contains between two and three grains of dry phosphate of lime in each fluid drachm, besides the lactic acid.

Revulsive Liniment.

Take of Oil of turpentine..... 80 parts.
Tartar emetic..... 4 "

Mix.

Frictions are to be practised three or four times a day, until an eruption is provoked

Useful in chronic rheumatism.—*Revue de Thérap. Méd.-Chir*.

Formula for Headache Following Alcoholic Debauch.

WRIGHT'S.

Take of Solution of acetate of ammonia, tincture of bitter orange-peel, syrup of bitter orange-peel, ss 20 parts.
Water.....500 "

M.

8. To be given in repeated tablespoonful doses.—*Revue de Thér. Méd.-Chir.*

Collyria.

Dr. Delieux de Savignac claims (*Bulletin de Thérap.*) that lavender water is very superior for use as a vehicle for collyria, and gives the following formula:

Astringent Collyrium.

Take of Crystallized alum... 0.3 parts.
Distilled water of lavender..... 100 "
Mix, and filter carefully.

Detersive Collyrium.

Take of Borax..... 1 to 2 parts.
Distilled water of lavender 100 "

Mix.

This collyrium is often more efficacious in painful ophthalmia than the astringent preparations. When the pain is excessive, from 1 to 2 parts of laudanum should be added to it.

Cataplasms of Iodide of Starch.

Take of Starch..... 12 parts.
Boiling Water.... 6 "

Mix, and add whilst still hot:

Tincture of Iodine. $\frac{1}{4}$ part.

When cool forms a jelly, which is often exceedingly beneficial as a local dressing in foul, ill-conditioned ulcers.—*Revue de Thér.*, Sept. 15, 1872.

Calabar Beans for Constipation.

Calabar beans have, until lately, been but little used, except for contracting the pupil of the eye, and by Dr. Ogle in chorea. Dr. Victor Subbotin, in the *Deutsch. Archiv. Klin. Med.*, proposes Calabar beans for atony of the bowels, observing that it has been found by Bauer, and confirmed by A. V. Bezold and others, that this drug produces a cramp-like condition in organs that are supplied with involuntary muscular fibres.

He uses the preparation in the following form:

R Ext. sem. physostig. ven., grs. iv.
Glycerin..... 3 ij.

Solve. Sig. Four times a day, four drops.

He first administered this solution to a female who was much constipated from atony of the bowels. After the patient had used this preparation twice, a swelling in the abdomen, caused by fecal matter, disappeared permanently, and the patient was cured. Her constipation had, however, once already disappeared temporarily by the use of aloes and rhubarb. Dr. Subbotin has since treated two cases of atony of the bowels and one case of chronic bronchial catarrh (atonic state of the bronchial walls) most successfully with the Calabar beans.—*Medical and Surg. Reporter*, Sept. 28, 1872.

Antiscorbutic Gargle.

Take Decoction of yellow bark. 150 parts.
Tincture of myrrh..... 8 "
Alcoholate of scurvy-grass. 8 "
Syrup of mulberries..... 40 "

Mix.

To be used as a mouth-wash and gargle in scurvy.—*Revue de Thér. Méd.-Chirurg.*

Anti-Neuralgic Pills.

Take of Valerianate of zinc. 0.30 centigr.
Ext. of hyoscyam. . 0.15 "
Ext. of opium..... 0.09 "
Conserve of roses q.s. to make 6 pills.

Give two or three, at intervals of three hours, and renew the same medication on the second day for trifacial neuralgia.—*L'Union Méd.*

Detersive Gargle.

Take of Decoction of cinchona. 150 grms.
Honey of roses..... 30 "
Chlorhydric acid... 20 to 30 grs.

Mix.

Employed in gangrenous angina.

—*L'Union Méd.*

[It should be remembered that acid

gargles, as well as those containing alum or tincture of the chloride of iron, are very destructive to the teeth.—Ed. N.R.]

Calvo's Depurative and Sudorific Syrup.

Guaiac and china-root. ss 250 grammes.
Sassafras..... 60 "
Sarsaparilla 500 "

Boil with sufficient water in a close vessel.

Add to this decoction :

Lobelia syphilitica..... 250 grammes.
Flowers of borage..... 62 "

Infuse for 12 hours.

And add :

White sugar..... 5,000 grammes.
Dose, 50 to 100 grammes daily.

—*L'Union Méd.*

Treatment of Gonorrhœa by Tanno-Glycerine Paste.

Dr. Tomowitz, K. K. Regiments Arzt, Austrian army, reports the successful employment of a modified Schuster's (Aix-la-Chapelle) tanno-glycerine paste for syphilis and gonorrhœa. His formula is as follows :

℞ Acidi tannici..... 3 ss.
Opii pulveris..... gr. iv.
Glycerinæ..... q. s. ut ft. pasta.

Some 50–60 drops of glycerine are requisite to bring the paste to a proper consistency. A sound or elastic bougie is dipped into the paste warmed over a stove or spirit-lamp, and thus smeared is introduced into the orificium penis to the fossa navicularis, where it is held for five minutes. This operation is repeated three times a day. In gleet the catheter or bougie is carried back to the bladder and slowly withdrawn, so as to bring the paste into contact with every surface of the urethra. Even in acute cases the pain is but very slight.—*Allg. Militarärztl. Zeit.*, Aug. 11, 1872; *The Clinic*.

Glycerole of Assafœtida.

BY ALONZO ROBBINS.

℞ Assafœtida..... $\frac{3}{4}$ ij.
Glycerine, q. s. ad..... f. $\frac{3}{4}$ viij.

Select the best assafœtida and cut it quite fine; put it into an eight-ounce bottle, and add five fluid ounces of glycerine, cork well and suspend in a can of water, which place on the stove where the heat will be very moderate; let it remain so a day or two, shaking the bottle frequently; then strain through a coarse cloth, and return the residue to the bottle with three fluid ounces of glycerine; let stand as before, and then strain into that first obtained, and make up to eight fluid ounces by adding glycerine.

One fluid drachm of this added to seven drachms of water will make milk of assafœtida containing the proper quantity of the drug.

The formula, as given above, I have made use of a number of times during the last ten years, and have found it to furnish at all times a good article of milk of assafœtida. I have also used glycerine with gum ammoniac, and, while the solution was not as perfect as that of assafœtida, I have found, upon examination, that the amount of ammoniac taken up is about the same as when the mistura ammoniaci is made by the official formula. With myrrh I did not succeed well, but still obtained a passable preparation, which I have no doubt could be, by continued experiments, much improved.—*Journal of Pharmacy*.

Ferrated Elixir of Calisaya.

There is no process of decolorizing calisaya. The elixir made from the bark will be transparent, clear, and of a beautiful reddish-brown color; a handsome preparation when freshly made, but which will become murky and deposit when standing long. To avoid this, different formulas have from time to time been published, which substitute quinia and cinchona for the percolate of the bark; the desired color may be easily given to the fluid by sandal-wood.

Take of Cinnamon water..... 2 pints.
Caraway water..... 1 pint.
Tinct. of orange-peel. $\frac{1}{4}$ "
Alcohol $\frac{1}{4}$ "

Brandy..... 2 pints.
Syrup..... 3 "
Pyrophosphate of iron 3 ounces.
Sulphate of quinia...12 grains.
Cinchona..... 4 "

Mix the cinnamon and caraway water with the tincture of orange-peel; dissolve the salt of iron, quinia, and cinchona in it; add the other ingredients and filter.
—*Druggists' Circular*, September.

Tannate of Quinia.

In a recent note made by Dr. Lisbach on tannate of quinia, this compound is said to possess many advantages over sulphate of quinine. Dr. Hager makes to this the following remark:—"After many experiments made on my own person and others, I have found that, as a febrifuge, tannate of quinine at the most is only one-tenth as effective as sulphate of quinine, and nine-tenths can again be found in the urine and feces."

Aromatic Vinegar.

There are different formulæ employed for the preparation of this pungent and refreshing stimulant; it is dropped for this purpose on a piece of sponge, or crystals of sulphate of potassa, contained in a stoppered bottle or "vinaigrette," which is only smelt at. Sometimes a few drops are placed on a hot plate, or sprinkled about a sick-room, to sweeten the air. As it is highly corrosive, it should be kept from contact with the skin and clothes.

1. Take of Glacial acetic acid. 1 pound.
Rectified spirit.... 2 fl. oz.
Camphor (pure crushed, small).. 2½ "
Oil of cloves (finest) 1½ dr'm
" rosemary,
" bergamot,
" cinnamon,
" lavender,
" pimento, 33 ½ "

Mix in a stoppered bottle, and agitate until the whole of the camphor is dissolved. Very fine and highly esteemed.

2. Take of Camphor.....1 ounce.
Oil of cloves.... 1 drachm.
" cedrat,
" lavender, 33.40 grains.
" bergamot,
" thyme, 33..20 "
" cinnamon..10 "

Glacial acetic acid. ½ pound.

Mix as before. Very fine.

3. Take of Glacial acetic acid. 1 pound.
Oil of cloves.....80 grains.
" cinnamon....20 "
" lave'r (Eng)..10 "
Camphor..... 2 ounces.

Mix as before.—*Druggists' Circular*.

Eclectic Formulas.

Dr. Eli G. Jones, in the *Chicago Medical Times (Eclectic)*, gives the following formulas:

Take of Angelica root 3 iv.
Dioscorea root 3 ii.
Leonurus,
Coriander seeds,
Anise seeds,
Dill seeds,.....aa 3 i.

Crush the whole; mix and macerate in forty ounces of thirty per cent. alcohol for ten days. Apply strong pressure and add half a pound of white sugar to the clear liquid.

Dose.—Half a teaspoonful in a little water every hour, or as often as necessary; is very useful as a carminative in colic, and in suppression of the menses:

Take of Parsley root,
Burdock, root,
Wild carrot seed, equal parts.

Make an infusion. This formula is not only useful in dropsy, but also in chronic inflammation of the kidneys.

The following are commended as excellent diaphoretic remedies.

A good diaphoretic may be made as follows:

Take of Tr. asclepias tub..... 3 ii.
Tr. caulophyll..... 3 i.
Tr. aristoloch..... 3 i.

Mix.

8. Give one teaspoonful in warm catnip or ginger tea every fifteen minutes. White root is in the proved composition powder.

Take of Myrica ℥ii.
Zingiber,
Asclepias aa ℥i.
Capsici ʒ ii.
Hydrastis ʒ ii.

Mix.

8. Dose, one teaspoonful in a cup half full of warm water.

Fumigating Pastilles of Coffee.

The vapor from roasting coffee is known to be an excellent disinfectant or deodorizer. To facilitate its use for this purpose, Mr. George C. Close has proposed the following formula:

R. Coffee, freshly roasted and ground 3 iv.
Powd. chlorate of potassa .. 3 ii.
Powd. tragacanth 3 iv.
Simple syrup 3 iii.

Make into conical-shaped pastilles of convenient size, and dry without heat. The coffee should not be very fine, but perhaps a little finer than it is ordinarily ground.—*Druggists' Circular*.

The New Treatments of Itch.

The following translation from the German of Professor Rothmund, we quote from an English source:

Balsam of Peru is preferable to all the other vaunted remedies, because the *Acarus scabiei* is most rapidly killed by it; because it acts with rapidity, with certainty, and agreeably; because it does no injury to the skin; because it easily penetrates the skin; because baths are not absolutely necessary with it; and because it kills all the acari and their eggs, for when well rubbed into the skin it comes in contact with the eggs. As a remedy for children it is superior to all others. The children are first placed in a warm bath, then well dried, and forty drops of the balsam rubbed well in. This is to be

repeated four or five times in the next twenty-four hours, and the cure is complete. It may be used in every form of itch in children with advantage. It has, to be sure, no effect on the eczema scabiei; for this, soap baths, starch powder, or glycerine inunctions are required. In adults the best plan is to rub in the balsam of Peru all over the naked body, slowly, carefully, and gently, giving special attention to certain parts of the body, especially the fingers. Although in the treatment of itch the rubbing-in cannot act mechanically, yet, whatever substance may be used, the mode of preparing the inunction is of great importance. As the balsam is readily distributed, nine grammes of it suffice for one operation. It is not at all necessary to begin the treatment with a bath; but if a bath is first given, the rubbing-in should not follow the bath immediately, as the balsam is more rapidly absorbed by a dry skin. Hence, in persons who easily perspire, the skin should be well dried before the remedy is used. When the operation is carefully performed, relapses occur very rarely, and there is never any increase in the eczema that may be present. It is seldom that prurigo occurs after the itch. Should it occur, this disagreeable symptom is more readily removed by the internal use of carbolic acid than by warm baths and soft soap or glycerine. The only objection to Peru balsam is its expense. Carbolic acid, on account of its efficacy, its facile employment, and its cheapness, deserves to be mentioned next to Peru balsam. It must be mixed with glycerine or oleum lini to prevent its caustic action. One scruple of acid. carbol. is to be mixed with two ounces of either of the two other excipients. In order to avoid poisoning, the carbolic acid must be used in small quantities, or, better still, as a salt, thus:

R. Natr. carbol. fl ʒ xv.
Aque destil. fl ʒ clxxx.
Mix.

With this the affected portions of the skin are to be rubbed three times a day, and even in the most inveterate cases the treatment never lasts more than two and a half days; relapses are not to be feared, and if the rubbing-in is carefully performed, no erythema to speak of occurs. An additional rubbing-in should be made some eight or ten days after the cure of the itch, in order to kill any acari or their eggs that may have lurked among the clothes or bed-linen.—*Med. & Surg. Reporter.*

After-Pains and suppressed Lochia.

℞ Chloral hydrate . grs. x.
Potass. brom.... grs. xx.
Aqua..... ʒi.
S. Every two hours. M.
—*Journal of Mat. Medica.*

Sleeplessness

occurring in hypochondria, hysteria, and, indeed, in all nervous affections, may be overcome with great certainty by the administration of the following pills:

℞ Assafoetida..... dr. i.
Morph. sulphatis..... gr. ij.
ft. pil. no. 30.
M.

S. One or two at bed-time.

They are very efficacious in arresting the dry cough which is occasionally consequent on disordered menstruation in nervous females.—*Georg. Med. Comp.*

Stimulating Hypodermic Injections in Typhoid Fever.

We find in the *Gazette Hebdomadaire* of June 16, some account of a novel mode of treatment adopted by a German physician in the collapse of typhoid fever. The subjects were Prussian soldiers, who, during the siege of Paris, suffered from typhoid of extremely ataxic type, with feeble heart-movement, small and irregular pulse, cyanosis, cold extremities, and general collapse. Dr.

Zuelzer, observing the resemblance to the choleric condition, in which he had derived good results from stimulating hypodermic injections, determined to try the same method, and accordingly injected into each of the four extremities ten drops sulphuric ether, with five drops "anisated ammoniacal solution." "The results were remarkable. The pulse, before small and irregular, became full and strong; the contractions of the heart, which had been feeble and irregular, became energetic and regular; its impulse, before imperceptible, was now well marked. Frequently, after one or two injections, the cyanosis and collapse vanished. This plan has the additional advantage of gaining time for other treatment. Small abscesses are formed at the places of puncture, but they are of no importance."—*Georg. Med. Comp.*

Formula for Chlorosis.

DR. JOHN WARE'S.

℞ Ferri citrat..... dr. ij.
Syrupi aurantii,
Aque menth. pip.... ss f. oz. ij.
Aque pure..... f. oz. iv.

M.

S. Teaspoonful twice a day.—*Georg. Med. Comp.*

Laxative Pill.

℞ Ext. aloes pulv..... oz. ss.
Gambogia..... dr. l.
Rhei pulv..... dr. ss.
Olei cinnamom..... gtt. xx.

Make 120 pills.

The above is the favorite laxative pill of a distinguished lecturer and practitioner.—*Georg. Med. Comp.*

Laxative Mixture.

Prof. Lindaly says the best remedy he has ever tried in habitual constipation, is to take a half drachm of *Eosom salta*, dissolved in half a pint of water—adding ten drops of elixir of vitriol—*one hour before breakfast*. The smaller the dose the better, provided it will operate.

It may be taken for weeks till a cure is effected.—*Georg. Med. Comp.*

For Diarrhœa.

R Tinct. camphoræ f. oz. iss.
Tinct. capsici f. oz. ss.
Spiriti lavendulæ comp.,
Tinct. opii ss f. oz. i.

M.

S. 20 to 30 drops pro re nata.

This is highly recommended, both in the milder forms of diarrhœa and in the early diarrhœal stage of epidemic cholera, by Dr. Horace Green, of New York.—*Georg. Med. Comp.*

Liniment for Rheumatism and Neuralgia.

PROF. COX'S.

R Olei origani,
Tinct. camphoræ . . ss f. oz. ss.
Granville's lotion . . . f. dr. iij.
Chloroformi dr. iijss.
Tinct. aconiti,
Tinct. capsici ss f. oz. ss.
Ol. sassafras dr. ss.
Lin. safon. comp'd . . . oz. i.

M.

—*Georg. Med. Comp.*

Albuminous Potion.

RICORD.

Take of Water of lettuce . . 60 grammes.
White of eggs . . . 1 or 2.
Syrup of poppy . . 80 grammes.

M.

To be taken in the course of the day, for subacute dysentery.

Pomade for Dandruff.

Take of Powdered wood charcoal,
Sublimed sulphur, . . . each 25 grammes.
Suet and carbonate of potash,
each 12 "
d. 100 "
a pomade. Anoint the night, and put on an oiled-

silk cap; in the morning wash with Castile soap. Repeat.—*L'Union Médicale.*

Pills for Retention of Urine.

HORION'S.

Take of Extract of belladon. 3 centigr.
" Indian
hemp 15 "
Bromide of potassium 30 "
Camphor 10 "

Make into 15 pills.

Five a day in retention of urine; pass daily into the urethra a larger and larger catheter.—*L'Union Médicale.*

An Injection for Gonorrhœa.

Dr. Reynolds claims almost uniform success for the following injection in gonorrhœa:

Take of Balsam copaiba 3 x.
Cryst. carb. soda 3 xx.
Water 3 xxx.

To one part of this emulsion add three parts of water, and inject through a catheter, carried into the urethra four or five inches, as often as twice or thrice a day. In chronic cases he uses equal part of water and the emulsion.—*American Pract.*

Pruritus Vulvæ.

LISFRANC.

Take of Bichloride of mercury. 1 part.
Alum 20 parts.
Starch 100 "
Water 2,500 "

Mix.

S. Apply freely to the part.—*Revue de Thérap.*

Antacid Powder.

Take of Calcined magnesia 8 gra.
Bicarbonate of soda 8 "
Powdered canella 8 "

Mix, and divide into six powders, one of which may be given every two hours to infants suffering from diarrhœa with green stools.—*Revue de Thérap.*

Carminative Mixture for Diarrhœa.

Dr. E. H. Coover has used the following with great advantage in epidemic diarrhœa with vomiting:

℞ Syrup of ginger.....f. ʒ iij.
Tr. of opium.....f. ʒ j.
Oil of cloves.....gtta. xxv.
Oil of cinnamon...gtta. xxv.
Syrup of rhubarb...f. ʒ ij. M.

Dose. One dessert-spoonful every two or three hours. This remedy seemed to ease.—*Med. and Surg. Reporter.*

Treatment of Chorea.

BY DR. EDWARD MONTGOMERY.

When the disease depends on anæmia, mal-nutrition, or an altered condition of the blood, favorable hygienic measures, with tonic medicaments, are indicated. In these forms of the disease strychnine, quinine, arsenic, zinc, iron, etc., are the medicines from which most good is to be expected. The following is a favorite prescription of mine in these cases:

℞ Strychniæ.....gr. i.
Quiniæ sulph.....3 i.
Acidi phosphorici dilut....f. ʒ i.
Aq. menth. virid.....f. ʒ vi.
Tinct. cardam. comp.....f. ʒ i.

Misce.

Sig. A teaspoonful three times a day, for a child eight or nine years of age.

The citrate of iron and quinine, or Fowler's solution of arsenic, with the tincture of cimicifuga racemosa, are remedies well adapted to this form of the disease.

When there is exalted nervous sensibility or hyperæsthesia, musk, assafoetida, castor, valerian, zinc, etc., will be found of essential service. A very good prescription is the following:

℞ Moschi.....gr. xii.
Zinci oxidl.....gr. xxiv.
Sacchari.....3 i. Misce.

• Divide in chart No. xii.

S. One powder three times a day for a child aged eight or nine years.

The only objection to the above is the expensiveness of the musk.

Another very excellent compound in these cases is this:

℞ Zinci sulphatis.....gr. xxx.
Ext. valerian (fluid) fl ʒ i.
Syrup limonis.....fl ʒ iii. Misce.

Sig. A teaspoonful three times a day, gradually increasing the dose.

I have found this prescription act most happily and promptly, stopping the choreic movements in a few days. To a watery solution of the sulphate of zinc may be added the tincture of castor, musk, cimicifuga; or any of these tinctures may be added to Fowler's solution, or the fluid extract of valerian, and it is well to have a variety of forms, so as to administer that combination which is most grateful and most efficacious to the patient. If pills can be swallowed, zinc and assafoetida can be given in that form with very flattering prospects of success. We have very great faith in the efficacy of zinc in a great many cases of chorea; either the oxide or the sulphate will answer; we should gradually and steadily increase the dose, and keep giving the medicine until the desired results are obtained. We have such a confidence in the efficacy of zinc in the great majority of these cases, and we have had such remarkable success with it, that we consider it almost a specific. A great many years ago we cured a young woman, aged twenty-three, who had been constantly suffering with the disease for ten years. In this case, besides the zinc, we prescribed the strychnine and quinine mixture, and also gave Vallet's carbonate of iron pills freely. It is important to pay attention to the bowels. When sluggish or torpid, the following prescription will be found particularly appropriate in this as in many other diseases attacking patients of weakly or nervous constitutions:

℞ Ext. belladonna.....gr. ii.
Ext. nucis vomicæ.....gr. iv.
Ferri sulph. exsiccât....3 ss.
Pulv. aloes soc.....ʒ ii.

Mix and divide into twenty pills, and give one night and morning, or one every night, as the case may require, until the bowels become perfectly regular.

Hydrate of Chloral in Hooping-Cough.

Dr. Karl Lorey reports (*Deutsche Klinik*, 46, 1872) the results which he has obtained from the use of chloral hydrate in pertussis. He gives it in the following formula:

Take of Hydrate of chloral... 5 parts.
Distilled water.....150 "
Syrup of orange-peel. 15 "

M.

The dose is from one to three teaspoonfuls, according to the age of the child. Generally, one teaspoonful is given in the morning, and one or two in the evening. The medicine is commenced as soon as the earliest characteristic symptoms appear, and is continued until the cough loses its catarrhal character. It is borne well by children, and produces no unpleasant consequences. It produces a marked reduction in the number and in-

tensity, as well as in the duration, of the paroxysms.—*Brit. Med. Journ.*, July 20, 1872, from *Wiener Med. Wochenschr.*, June 15.

Ointment for Piles.

M. F. Guym, of the Næker Hospital, Paris, prescribes in painful hæmorrhoids an ointment composed of one part of extract of belladonna, two of extract of rhatany, and fifteen of lard.—*The Doctor*.

Chlorodyne.

B Morphine mur.....gr. xij.
Acid hydrochlor. dil....q. s.
Tinct. lobelia.....f 3 iss.
Tinct. capsici.....f 3 j.
Ol. ment. pip.....℥ v.
Chloroform.....f 3 vi.
Acid. hydrocyan. schl...℥ xviii.
Æther. sulph. rect.....f 3 i.
Treacle.....f 3 iss.
Ext. glyc. (mollis).....3 i.
Aq. ad.....f 3 iij.

M.

—*The Doctor*.

Formulæ.

Soluble Sulphate of Quinia.

J. Donde of Yucatan proposes the following formulæ in the *Jour. of Pharmacy*.

Soubeiran and others, speaking about this preparation, say that the officinal sulphate must be dissolved in water acidulated with sulphuric acid, the solution evaporated, etc.; but as the quantity of acid is not given, the success is not certain: an excess of acid prevents the crystallization of the salt, and a yellow, somewhat greenish and deliquescent mass is obtained. After having failed twice, I succeeded well with the following exact proportions:—

Quinia sulphate, basic...150 grm.
Rain water..... 2 litres.
Sulphuric acid, 668.... 22 grm.

The acid is mixed with the water in a porcelain capsule, the sulphate is then

added, and the mixture occasionally agitated until dissolution has taken place, which requires about an hour, at a temperature of 29° C. After filtering, the evaporation is continued till the liquor is reduced to 600 grm.; 24 hours afterwards the crystals are taken out, and the mother liquor remaining is evaporated a second time in order to obtain more crystals. The mother liquor finally remaining is used for precipitating the quinia.

Lemon Syrup.

Simple syrup..... 50 centilitres.
Lemon-juice purified. 45 grm.

The syrup is concentrated to 88° by boiling, and when it is cool the lemon-juice, clarified by repose, is added to it. One ounce and a half of this syrup and eight ounces of water will make a very agreeable lemonade.

Syrup of Cinchona.

M. Saint-Plancat proposes the following:—

Take of

Calisaya bark, 100 grammes.
Alcohol at 50° 1 kilogr.
Sugar, 1 kilogr.
Water, q. s.

Treat the bark with the alcohol by displacement, and afterwards by enough water to obtain 1000 grammes of liquid, which is to be received in a vessel containing the sugar, coarsely powdered, and set in a salt-water bath. Distil the syrup until all the alcohol is driven off.—*L'Union Pharmaceutique*, Jan. 1878.

Hypodermic Medication.

MUCH of the success of this method of medication depends upon the purity of the medicines used, and the character of the solutions. The remedy should be in a perfect state of solution, and always filtered to remove any undissolved portions, as such are apt to give rise to the formation of small abscesses. The solution should not be too strongly acid or alkaline, and not too much concentrated. Pure distilled water only should be used as a solvent, when practicable, and the solution should not be kept too long. We give below some of the formulæ in common use.

For Morphine, Magendie's solution is the best. It consists of Morphine sulph. grs. xvj; Aquæ dest. 3j. Mix and filter. The dose is from 5 to 8 minims.

For Atropine; R. Atropine sulph. gr. ss.; Aquæ dest. 3 iij. Mix and filter. The average dose is 4 minims. If it is desired to combine these two remedies, one grain of atropine may be added to the ounce of Magendie's solution; of this, five minims is the average dose.

For Strychnine; R. Strychnine sulph. gr. j; Aquæ dest. 3 iij; Acidi hydrochlori., gt.j. Mix and filter. Average dose five minims. It would be well to begin with a small dose and gradually

increase.

For Quinine; R. Quinine sulph. grs. xx; Acidi sulph. dil., ten minims; Aquæ dest. 3 iij. Mix and filter. Nine minims equal one grain. This solution is more apt to cause abscess than the above, on account of its greater acidity.

For Calabar Bean; R. Ext. calabar bean grs. ij.; Aquæ dest. 3j. Mix and filter. The average dose of this is eight minims.

For Corrosive Sublimate; R. Hydrarg. Bichlor. gr. j.; Aquæ dest. 3 ij. Mix. Dose about ten minims, and may be used every alternate day. It has been highly spoken of in the treatment of constitutional syphilis.—*Canada Lancet*.

An Ointment for Neuralgia.

Dr. J. Knox Hodge recommends the following as an application which will relieve facial or any other neuralgia almost instantaneously:—

Take of Albumen of Egg oz. j.
Rhigolene dr. iv.
Oil of Peppermint ... dr. ij.
Collodion,
Chloroform ss dr. j.

M.

Agitate occasionally for 24 hours, and by gelatinization a beautiful semi-solidified, opodeldoc-looking compound results, which will retain its consistency and hold the ingredients intimately blended for months.

Apply by smart friction with the hand, or gently with a soft brush or mop along the course of the nerve involved.—*Georgia Companion*.—*The Clinic*, Sept. 28, 1872.

Fluid Extract of Senega.

H. N. Rittenhouse, of Philadelphia, proposes the following as an improved process of making the fluid extract of Senega. He says:—In my hands the following has given a very satisfactory fluid extract, a sample of which, although exposed to all the changes of tempe-

rature of the past six months, has shown no tendency at all to gelatinize, and has only deposited a very slight sediment:—

Take of—

Senega in coarse powder. 7,680 grains.
Bicarb. soda..... 153 “
Alcohol, one part }
Water, three parts } 82 oz., or q. s.

Mix thirty-two ounces of the alcohol and water, and dissolve the soda in it, moisten thoroughly the senega with this and let it macerate in a covered vessel twenty-four hours, transfer the mass to a percolator and displace twelve ounces, set this aside and continue the percolation with alcohol and water in the above proportions until the drug is exhausted; evaporate or distil this last portion until reduced to three fluid ounces, add one ounce of alcohol to this, and mix it with the reserved twelve ounces. Shake well this extract for a day or two at frequent intervals, and then decant or filter.

Colorless Tincture of Iodine.

J. R. McCullough proposes the following as an improved formula:—

Take of Tinct. iodine..... one ounce.
Glycerine pure..... one ounce.
Sulphite of soda one drachm.

Rub the salt to a powder in a small mortar, and add the glycerine gradually; then pour in the tinct. iodine and triturate gently until a solution is effected, and the mixture assumes an amber color. The properties of iodine are increased by the aid of the salt, and the vehicle of glycerine employed certainly enhances its value, and convenience for application locally to scorbutic and other similar ulcers.—*Pharmacist.*

Elixir of Bismuth.

Oxide of bismuth..... $\frac{3}{4}$ ix.
Citric acid..... $\frac{3}{4}$ xvi.
Strong solution of ammonia. fl $\frac{3}{4}$ xij,
or q. s.
Water..... q. s.

To provide the oxide of bismuth, a pound of the subnitrate of commerce is

boiled for five minutes in four pints of liquor potassæ, which must be free from carbonate. The oxide is easily washed by decantation, and must be dried at a moderate heat. It forms a dull lemon-yellow powder, having the formulæ Bi_2O_3 (Bi_2O_3).

To prepare the solution, dissolve first eight ounces of the citric acid in four fluid ounces of water, and carefully neutralize with solution of ammonia (about seven fluid ounces) mixed with half its volume of water. Then add the remainder of the citric acid, and when it has dissolved introduce the oxide of bismuth. Heat the mixture to near its boiling-point for fifteen minutes, with frequent stirring; then add a pint of water and sufficient ammonia to dissolve the citrate of bismuth, and render the liquid slightly alkaline. Finally make up the measure of one gallon, and filter through paper.—*London Pharmaceutical Journal.*

Brown-Séquard's Neuralgic Pill.

R. Extract belladon..... gr. 1-6
“ stramon..... gr. 1-5
“ cannab. ind.... gr. 1-4
“ aconit..... gr. 1-8
“ opii..... gr. 1-2
“ hyoscyam..... gr. 2-8
“ conii..... gr. 1
Pulv. glyc..... gr. q. s.

For one pill.—*The Medical and Surgical Reporter.*

Lacto-Phosphate of Lime.

The following formula is commended in *The Chemist and Druggist* for August, 1872:—

R. Concentrated lactic acid. 1 fl. oz.
Magma of freshly precipitated phosphate of lime,
as much as will dissolve.
Orange-flower water..... 1 $\frac{1}{2}$ oz.
Water up to..... 8 “
White sugar..... 11 ozs.

Mix the lactic acid with two ounces of water, and saturate it with the magma. Put the liquid upon a filter and add the rest of the water until eight fluid ounces of filtrate are obtained. Pour this upon the sugar contained in a bottle; shake occasionally, until solution is effected, and strain. No heat ought to be applied, else the syrup assumes a milky appearance. The syrup thus prepared contains between two and three grains of dry phosphate of lime in each fluid drachm, besides the lactic acid.

Purgative Mixture of Vienna.

Take of Manna.....	66 grms.
Senna.....	10 "
Cream of tartar.....	4 "
Coriander, raisins,	
ss.....	2 "
Water.....	320 "

Boil until the water is reduced to 190 grammes.

Take before breakfast.—*Journal de Pharm. et de Chimie*, October, 1872.

Various Formulæ.

The following formulæ are taken from the collection recently published for use in the Philadelphia Hospital.

In their preparation cheapness was especially kept in view.

Confectio Guaiaci Composita.

- ℞. Guaiaci pulv. gr. xxx.
Pulv. rhei 3 j.
Sulphuris 3 j.
Potassæ bitartratis 3 ss.
Zingiberis gr. xxx.
Syrupi q. s.

Ft. confect.

Dose—Two to four drachms.

Phil. Hosp. Ph.

Linimentum Saponis Viridis.

- ℞. Saponis viridis 3 j.
Alcoholis q. s.

M. Dissolve and filter.

Phil. Hosp. Ph.

Linimentum Terebinthinæ Compositum.

- ℞. Ol. terebinth. f 3 j.
Tr. saponis camph. q. s. ad f 3 vj
Aqueæ ammoniæ (f. f.) f 3 j.

M.

Phil. Hosp. Ph.

Linimentum Chloroformi Compositum.

- ℞. Chloroformi f 3 ij.
Tr. aconiti rad. f 3 ss.
Aq. ammoniæ f 3 ss.
Ol. olivæ f 3 v.

M.

Phil. Hosp. Ph.

Mistura Arsenicalis.

- ℞. Liq. potass. arsenitis f 3 j.
Ferri et ammoniæ tart. 3 ss.
Aqueæ f 3 j.
Glycerinæ q. s. ad f 3 iss.
Ol. cinnamomi gtt. vj.

Dose—Teaspoonful.

Phil. Hosp. Ph.

Mistura Arsenicalis Comp.

- ℞. Liq. arsenici chloridi f 3 j.
Cinchon. sulph. 3 ss.
Tr. ferri chlorid. f 3 ij.
Strychniæ sulph. gr. ss.
Syrup. q. s. ad f 3 iss.

Dose—Teaspoonful.

Phil. Hosp. Ph.

Mistura Cretæ Preparatæ Comp.

- ℞. Tr. catechu,
Tr. opii camph. ss f 3 vj.
Acid. carbolic. gtt. xij.
Misturæ cretæ prep. q. s. ad f 3 vj.

S. Dose—Tablespoonful.

Phil. Hosp. Ph.

Mistura Acidi Sulphurici Astringens.

- ℞. Acid. sulph. aromat. f 3 ij.
Extr. hæmatoxyl. 3 ij.
Tr. opii camph. f 3 ss.
Syrup. zingiberis q. s. ad f 3 vj.

M. S. Dose—Tablespoonful.

Very useful in serous and other non-inflammatory diarrhœas.—*Phil. Hosp. Ph.*

Mistura Ferri et Cinchon. Comp.

- R. Cinchonæ sulph. 3 j.
 Strychniæ sulph. gr. j.
 Ferri pyrophosphatis 3 j.
 Acid. tart. q. s.
 Syrup. f ʒ ij.
 Olei carui gtt. x.
 Glycerinæ f ʒ ss.

M. S. Dose—Teaspoonful.

Phil. Hosp. Ph.

Mistura Amara.

- R. Extr. gentian. fld.,
 Extr. quassiaæ fld., ss f ʒ iij.
 Tinct. zingiberis,
 Aquæ q. s. ad f ʒ iij.

S. Dose—One to three teaspoonfuls.

Phil. Hosp. Ph.

Mistura Ferri Amara.

- R. Extr. gentian. fld.,
 Extr. quassiaæ, ss f ʒ iij.
 Tinct. zingiberis f ʒ ii.
 Ferri pyrophosph. 3 ij.
 Aquæ q. s. ad f ʒ iij.

M. Dose—Teaspoonful.

Phil. Hosp. Ph.

Mistura Chinoidine.

- R. Chinoidine,
 Acidi acetici, ss ʒ j.
 Misturæ aromaticæ, f ʒ xxix.

Digest in a half-gallon bottle for twenty-four hours, with frequent agitation until all the chinoidine is dissolved.

A teaspoonful contains two grains.

Phil. Hosp. Ph.

Mistura Ferri Pyrophos. cum Quinia.

- R. Ferri pyrophosphat. 3 iv.
 Quiniæ sulph. 3 j.
 Acid. phosphor. q. s.
 Misturæ aromaticæ, ʒ xxx.

M. S. Dose.—A tablespoonful = 4 grs. of the pyrophosphate of iron, and 1 gr of the sulphate of quinia.

Phil. Hosp. Ph.

Mistura Aromatica.

- R. Sem. coriand. dra. 3 ij.
 Sem. angelicæ dra. 3 iiss.
 Spts. vini deod. f ʒ xij.
 Aquæ f ʒ x.
 Glycerinæ f ʒ v.
 Syrupi f ʒ vj.
 Percolate 2 pinta.

A pleasant vehicle for administering nauseous remedies.

Phil. Hosp. Ph.

Mistura Cosmetica.

(*Goddard's Cosmetic Lotion.*)

- R. Tr. benzoin. 3 ij.
 Hydrarg. bichlor. gr. vj.
 Aquæ rosæ f ʒ vj.

M.

Phil. Hosp. Ph.

Mistura Sodæ Composita.

- R. Sodæ bicarbon. gr. xx.
 Creasoti gtt. ij.
 Acaciæ,
 Sacchari alb., ss q. s.
 Sp. lavandulæ comp. f ʒ ij.
 Aquæ q. s. ad f ʒ j.

Ft. mist.

Dose—Half a fluid ounce two hours after meals.

Phil. Hosp. Ph.

Mistura Zollicofferi.

- R. Potas. iodid.,
 Pulv. guaiac. res., ss ʒ iiss.
 Vin. colchici rad. fl ʒ iiss.
 Syr. simp. et
 Aquæ cinnamom. ss ad oj.

M. S. Dose—One tablespoonful.

Phil. Hosp. Ph.

Pilulæ Chinoidine et Arsenici.

- R. Chinoidine,
 Ferri pulv., ss gr. xl.
 Extr. nucis vomicæ gr. v.
 Acid. arseniosi gr. j.
 Ft. mas. in pil. xx. div.

Phil. Hosp. Ph.

Mistura Ferri Chloridi Composita.

(*Basham's Mixture.*)

- R. Liq. ammon. acet. ʒ iij.
Tr. ferri chlor. f ʒ iiss.
Acid. acet. dil. f ʒ j.
Alcohol. f ʒ ij.
Syrupi Aquæ, ss q. a. ad f ʒ vj.
M. S. Dose—Tablespoonful.
Phil. Hosp. Ph.

Pilulæ Colocynthæ c. Belladonna.

- R. Aloes,
Extr. colocynth. comp., ss gr. xvij.
Extr. belladonnæ gr. iss.
Ol. anisi gtt. xii.
Ft. mas. in pil. xij. div.
Phil. Hosp. Ph.

Pilulæ Podophylli Comp.

- R. Resinæ podophylli gr. ij.
Extr. colocynth. comp.,
Extr. hyoscyami, ss gr. xij.
Ft. mas. in pil. xij. div.
Phil. Hosp. Ph.

Pilula Rhei et Gentianæ.

- R. Pulv. rhei gr. ij.
Ext. gentianæ gr. j.
Ext. hyoscyami gr. j.
M. et ft. pil. no. j.
Phil. Hosp. Ph.

Pilula Aloës Composita.

- R. Ferri sulph. exsicc. gr. j.
Pulv. aloës gr. ij.
Terebinthinæ alb. gr. j.
Ol. terebinth. q. s.
M. et ft. pil. no. j.
Phil. Hosp. Ph.

Pulv. Sodæ Compositus.

- R. Bismuth. subnitrat. gr. v.
Sodæ bicarb.,
Zingiberis,
Calumbæ, ss gr. ijs.
M. et ft. chart. j.
Phil. Hosp. Ph.

Syrupus Gualaci.

- R. Guaiac resin. ʒ j.
Liq. potass. f ʒ ss.
Aquæ q. s. ad f ʒ viij.
Adde
Sacch. albæ lbj. et ft. syrup.
Sig. Dose—teaspoonful (containing
5 gra. of guaiac).
Phil. Hosp. Ph.

Tinctura Styptica.

(*Pancoast's Styptic.*)

- R. Potas carb. ʒ iij.
Saponis hisp. ʒ j.
Alcohol f ʒ ij.
M.
Phil. Hosp. Ph.

**The Use of Bullock's Blood
in Medicine.**

BY WILLIAM C. BAKES.

My purpose in calling attention to this article is to state that, though the use of powdered blood may be a novelty in Europe, it is not a new thing in this country. In 1852, at the suggestion of the late Professor Samuel Jackson, M. D., Mr. Elias Durand, an eminent pharmacist of this city, carefully evaporated fresh bullock's blood to the consistence of an extract, which was reduced to powder, and prescribed by Dr. Jackson, under the title of pulv. sanguinis. The following is a copy of one of his prescriptions:—

- R. Pulv. sanguinis, one drachm.
" aromat.,
" sacchari, ss, . . half a drachm.
M. et divide in chart. No. xij.

Dr. Jackson prescribed this preparation in a large number of cases with satisfactory results, and I think I am correct in stating that the use of this remedy suggested to him the compound mixture of phosphates, afterwards considerably modified, and now popularly known under the name of chemical food.—*Am. Jour. of Pharmacy*. Vol. xlv. No. 10.

Aromatic Syrup of Phosphates of Iron and Quinia with Ignatia.

B. Ferri sulphatis pur.....	3	xv
Sodæ phosphatis.....	3	ij
Quiniæ sulph.....	3	vi
Acidi sulph. dil.....	q.	s.
Aq. ammoniæ.....	q.	s.
Tinct. ignat. amaræ sat.....	3	ij
Sacchari albi.....	3	xx
Acidi phosphorici glæc.....	3	xv
Alcohol.....	3	iv
Tinct. aurant. essent.....	3	j
Ol. cardamomi sem.,		
Ol. carui, aa.	gtt	xx.

Dissolve the sulphate of iron in three ounces, and the phosphate of soda in five ounces of boiling water. Mix the solution in a porcelain bottle with a tight-fitting stopper, and instantly insert the stopper so as to exclude both light and air. Set aside till the precipitate of phosphate of iron separates. Throw this on a fine linen filter and place in a porcelain funnel, and pour on water of the temperature of 180° F. till the washings cease to be affected by chloride of barium. Then rapidly fold up in the linen filter and subject to pressure in a press until quite dry, and dissolve in the distilled water by the aid of the glacial phosphoric acid. Dissolve the sulphate of quinia in six ounces of water with sufficient dilute sulphuric acid, and precipitate the quinia by the addition of aqua ammoniæ. Wash the precipitated quinia carefully with water, and dissolve in the solution with the iron. Mix the alcohol and saturated tincture of ignatia together. Rub the essential oils and the tincture of orange with the sugar, and, lastly, mix all the ingredients and dissolve without heat.

The saturated tincture of ignatia is made by percolating sixteen ounces of alcohol through twenty-four ounces of finely pulverized ignatia bean. This syrup differs somewhat from the syrup of phosphates of iron, quinia and

strychnia, and, though less elegant in appearance, keeps much better.—*C. G. Polk, M. D., in American Journal of Pharmacy.*

Oleates.

BY ALFRED W. GERHARD, PHARMACIST
TO GUY'S HOSPITAL.

By reason of the impurities in commercial oleic acid, I find that it cannot be made to unite with the salts used in the following preparations in equivalent proportions; it will, however, form solutions of 20 per cent., and this I have chosen as a suitable strength:—

Oleate of Lead (20 per cent.).

Prepared by heating together oxide of lead one part, oleic acid four parts, until dissolved; on cooling, it forms a semi-transparent tenacious mass somewhat thinner than lead plaster. This is not well adapted for direct application, but requires diluting, and as it mixes readily with ordinary fats and oils, I have adopted the following formula for its exhibition:—

Ointment of Oleate of Lead.

Take of—

Oleate of lead (20 per cent.) 2 parts.

Oil of almonds. 1 part.

Prepared lard. 1 “

Mix with a gentle heat.

On cooling, this forms an elegant ointment resembling that of spermaceti.

Oleate of Zinc (20 per cent.).

Prepared by heating together oxide of zinc one part, oleic acid four parts, until dissolved. During the process of solution some bubbling takes place with disengagement of watery vapor. It is transparent when melted; on cooling it has the appearance of lead plaster, is hard and friable, and requires to be diluted in the same manner as oleate of lead.

Ointment of Oleate of Zinc.

Take of—

Oleate of zinc (20 per cent.) 2 parts.
Oil of almonds..... 1 part.
Prepared lard..... 1 “

Mix with heat.

This forms an ointment of the ordinary consistence.

Whilst experimenting with the above, I thought that if atropia and aconitina were soluble in oleic acid, they might prove useful preparations. I find they are readily so at ordinary temperatures, whilst the sulphate of atropia is soluble on the application of heat.

I have prepared solutions of the above, which nearly correspond to the ointments of the British Pharmacopœia.

Solution of Oleate of Atropia.

Take of Atropia..... 2 grains.
Oleic acid..... 98 grains.
Dissolve.

Solution of Oleate of Aconitina.

Take of Aconitina..... 2 grains.
Oleic acid..... 98 grains.

On economical grounds there can be no objection to the introduction of the oleates, as large quantities of oleic acid can be obtained at a cheap rate, but the chief consideration is whether they possess any advantages as remedial agents beyond those of the same kind already in use. This is a question for the therapist, and must be left to the physician and surgeon to decide.

Internal Hemorrhoids Treated without Operation.

During the past year, Dr. Beekman has treated, at the New York Dispensary, eleven cases of internal hemorrhoids, all occurring in females, and all treated without operation. In every case, the only internal medication consisted in the employment of the following formula:—

R. Pulv. sennæ,
Potass. bitartrat.,
Pulv. sulphuricæ..... 53 2 oz.
Pulv. zingiberis..... ½ oz.—M.

This preparation is designated in the Dispensary Pharmacopœia as *Pulevis Sennæ Compositus*. The dose, as employed by Beekman, was a teaspoonful of the powder, in molasses, every morning. The local treatment consisted in the use of the following ointment:—

R. Ext. belladonnæ,
Plumbi acetatis..... 53 2 dr.
Acid. tannic..... ½ oz.
Ung. adipis..... q. s.
M. et fiat unguentum.

A small mass of the ointment to be introduced within the anus thrice daily, after a thorough ablution of the parts with cold water.

The duration of the treatment was quite various, bearing a direct ratio to the severity of the case, ranging from a week to about five weeks. As far as could be ascertained, recovery took place in every instance, and no case of relapse has thus far come to Dr. Beekman's notice. A few of these patients suffered from hemorrhage, but not to an excessive amount. Instead of the ointment above mentioned, Dr. Beekman uses, in private practice, suppositories made up of the same ingredients, with the exception that cocoa butter is substituted for the simple ointment—each suppository containing two grains each of the extract of belladonna and acetate of lead, with four grains of tannin.—*Medical Archives*.

Compound Liniment of Mustard.

Take of oil of mustard, 1 fluid drachm.; ethereal extract of mezereon, 40 grains; camphor, 120 grains; castor oil, 5 fluid drachms; rectified spirit, 4 fluid ounces. Dissolve the extract of mezereon and camphor in the spirit and add the oil of mustard and castor oil.—*Druggists' Circular*.

Anodyne Colloid.

Dr. M. H. Lackersteen gives (*Brit. Med. Journ.*, Dec. 21, 1872) the following formula for a topical anodyne colloid which he has found useful in neuralgia, sciatica, lumbago, all muscular pains, etc. It relieves local pain for the time, and procures a good night's rest. *R.*—Hydride of amyl, $\frac{3}{4}$ j; aconitia, gr. j; veratria, gr. vj; ethereal collodion to $\frac{3}{4}$ ij. The amyl, by its rapid volatilization, often produces, almost instantaneously, the desired result; but, should the pain continue, the alkaloids can be brought into activity by applying a piece of moist spongio-piline over the collodion film. The amyl hydride is the only new ingredient; but I think the colloid is a clean and elegant preparation.

Juniper Tar Soap.

R. Oil of juniper, 1 fl. ounce,
Soft soap, 1 fl. ounce,
Alcohol, 1 fl. ounce. *Mix.*
—[*Druggists' Circular.*]

For Chilblains.

Oxide of zinc, two parts; tannic acid, one part; glycerine, ten parts; balsam of Peru, eight parts; camphor, four parts. *M.*—*Southern Medical Record.*

Cholagogue.

The following is advised as an excellent cholagogue to combat very obstinate hepatic troubles:

R. Fld. ext. taraxaci: elixir cinchonæ, ferri, et strychniæ aa. *M.* Dose, two drachms three times daily before meals. —*Ibid.*

Chilblains.

The following is useful where the chilblains are broken. Take of finely powdered galls, 1 drachm; spermaceti ointment, 7 drachms. *Mix* well, and then add: glycerine (pure), 2 drachms, and

rub the whole intimately together. Use it as an ordinary dressing.—*Druggists' Circular.*

Aromatic Syrup of the Citrate of Iron, Cinchona and Strychnia.

BY C. G. POLK, M.D.

I propose the following formula which very satisfactorily meets my requirements as a physician, but which may not be sufficiently elegant to fill the wishes of the pharmacist:—

R. Liq. ferri citratis..... 3 xiii.
Sulph. cinchonæ..... gr. c.
Sulph. quiniæ..... gr. xcij.
Strychniæ..... gr. iij.
Acidi citrici..... $\frac{3}{4}$ i.
Aque bull..... $\frac{3}{4}$ xii.
Sacch. alb..... $\frac{3}{4}$ xiv.
Tinct. aurant. (essent.).... $\frac{3}{4}$ ss.

First dissolve the sulphates of quinia and cinchonia in four ounces of water by the aid of sulph. acid. dil., and precipitate with aqua ammoniæ, gradually added until no more of the alkaloids are thrown down. Dissolve the citric acid in the boiling water, and add to the solution the alkaloids—cinchonia and quinia, first carefully washed free from every impurity, and also the strychnia and the sugar, first thoroughly rubbed up with the essential tincture of orange, and lastly, the solution of citrate of iron, and shake continually until the sugar is all dissolved.

This forms an amber-colored syrup, measuring about twenty-four ounces and of rather a pleasant bitter taste, in which the aromatic of the orange very materially modifies the bitter properties of the cinchona alkaloids. The intention is, that one drachm shall contain two grains of citrate of iron, one of the cinchona alkaloids and one sixty-fourth of a grain of strychnia. As the solution of citrate of iron is officinal, it is presumed that every druggist understands the mode of manufacturing it.

Phosphorus Pills.

Dissolve one grain phosphorus in half a drachm of chloroform, and rub in a mortar with two scruples powdered liquorice root till all the chloroform has evaporated. Add half a drachm powdered soap and work into a mass with water and divide into 24 pills.—*Druggists' Circular*.

Cream of Bismuth.

Take of
Subnitrate of bismuth..... 4 parts.
Starch..... 8 "
Glycerine..... 12 "
Mix.

Prof. Thiry commends very highly the above mixture as a local application in ectropion. When an astringent effect is desired, 1 to 2 parts of acetate of lead may be added.—*Presse Médicale Belge*.

Iodine Injection for Menorrhagia.

Dr. Dupierriis, of Havana, according to the editor of *Revue de Thérap. Médico-Chirur.* (Nov. 1), has used the following prescription with very good results as an injection in a number of cases of uterine hemorrhages. No evil results have ever followed: the editor has also used the formula with great advantage in several cases.

Take of
Tinct. of iodine..... 15 parts.
Iodide of potassium..... 0.50 "
Distilled water..... 80 "
Mix.

Zootrophic Powder.

Dr. Polli recommends the following powder in—

1. Infants suffering from dentition.
2. Infants suffering from osteomalacia, rachitis, scrofula or chlorosis.
3. Pregnant females, and those having a puerperal cachexia.
4. In fractures and caries of the bones.
5. In tuberculosis, especially when vomica exists.

6. In the anæmia following hemorrhage and in leucocythæmia.

7. In convalescence from protracted disorders.

He thinks it does good by acting as a sort of mineral food.

Take of
Tribasic phosphate of lime.... 10 parts.
Phosphate of soda..... 15 "
Carbonate of lime..... 10 "
Sulphate of magnesia..... 15 "
Chloride of sodium..... 10 "
Bicarbonate of potash..... 15 "
Oxide of iron..... 10 "
Oxide of manganese..... 2.50 "
Silicate of potash..... 2.50 "

Make into a powder.

The dose for an adult is 75 grains a day, for an infant 30 grains.

Revue de Thérap. Nov. 15, from Medizinisch-chirurg., Rundschau.

Richard's Revulsive Lini-ment.

Take of
Water of ammonia..... 10 parts.
Oil of turpentine..... 15 "
Oil of sweet almonds..... 15 "

Mix.

Three daily frictions lasting four or five minutes in obstinate sciatica; the limb to be enveloped in cotton wadding.

Stomatitis.

Dr. S. R. Knight has used the following for Stomatitis of infants with great success:—

Jenner's Formula.

* B. Sodæ Sulph..... 3 i.
Aque..... f ʒ j.
To be applied with a camel's-hair pencil.

In other cases of stomatitis.

Jenner's Formula.

† B. Boracis..... 3 i.
Glycerinæ..... f ʒ j.
Apply with camel's-hair pencil.

* Highly spoken of by Jenner.

† Strongly recommended by Jenner.

Tincture of Iodine.

In order to avoid the difficulty of powdering, R. Rother proposes in the *Pharmacist* the following method of making tincture of iodine:—

Take of

Iodine,.....1 troy ounce.

Sodium chloride,..... $\frac{1}{4}$ troy ounce.

Strong alcohol,.....14 fluid ounces or sufficient.

Water,.....2 fluid ounces.

Rub the iodine and sodium chloride together, and add four fluid ounces of strong alcohol, triturate the mixture a few moments, and pour the liquid into a small filter; with the residue again mix four fluid ounces of strong alcohol, and pour the liquid into the filter after the first portion has passed through; repeat this manipulation with four fluid ounces more of strong alcohol, rinsing all the sodium chloride into the filter, and pour on strong alcohol until the filtrate measures 14 fluid ounces; then remove the filter with the white residue of sodium chloride, add the water to the filtrate, and mix; or the filter can be dispensed with, the solution of iodine successively poured off the residue into a bottle until the whole solution measures 14 fluid ounces; the suspended particles of sodium chloride allowed to subside, the solution decanted, and finally mixed with the water.

Mucilage of Gum-Arabic.

According to R. Rother, the following formula affords a mucilage which will keep in the hottest weather:—

Take of

Gum-arabic, 12 troy ounces.

Glycerine, 8 fluid ounces.

Water, 16 fluid ounces.

Chicago Pharmacist.

Laxative.

Dr Page recommends the following preparation of the Prussian Pharmacopœia:—

R.—Senna leaves,.....oz. vj.

Liquorice root,.....oz. vj.

Fennel seeds,.....oz. iij.

Sulphur,.....oz. iij.

Refined sugar,.....oz. xvij.

The usual dose is a small teaspoonful at bedtime, in water, with which it is easily mixable, forming an agreeable draught. Children readily take it, with the belief that it is a sweetmeat.—*London Practitioner.*

Ung. Hydrarg. Oxidi Rubri.

Mr. J. Kalish (*Am. Journ. Pharm.*) recommends the following formula as producing a permanent preparation:—

Ol. Ricini.....six drachms.

Cera alba.....two drachms.

Hydrarg. oxid. rubrum...one drachm.

The ointment is said to be of good consistency, and a sample six months old exhibited no signs of change. The preparation is, however, liable to objection on account of the disagreeable odor of the castor oil, and also from being more irritating from the presence of this substance. In regard to this the writer says:—"To obviate this I substituted olive oil for the castor oil, but not with satisfactory results. Still I am not able to state positively that olive oil, entirely free from rancidity, will deoxidize the mercury, as I have some doubts about the oil I used. I then tried sweet oil of almonds; with this I have an ointment, made ten weeks ago, which has as yet shown no signs of change. I had previously tried lard, purified by different methods, also adding a few drops liq. potassæ, as remarked in the U. S. Dispensatory; but in each case there was a reduction of the oxide."

Part 5.

GENERAL RECEIPTS.

Varnish to Prevent Rusting of Surgical Instruments.

The *Druggists' Circular* says: "There is a varnish which will protect surgical instruments from rust, but we do not recommend it for such a purpose, though it is very useful to protect steel under other circumstances. Here it is: Melt common rosin with a little Gallipoli oil and spirits of turpentine in proportions adapted to the particular case. The varnish should adhere firmly, not chip, and yet be easily removed. We have recently seen a mixture of carbolic acid and olive oil recommended in an English paper; but paraffine dissolved in benzine is said to be still better. We do not think that the simple mercurial ointment can be much improved upon for delicate instruments."

Origin of Guano.

In the last number of *NEW REMEDIES*, was published a statement from a German journal, that Habel had discovered guano to be formed from protozoa. Prof. A. M. Edwards writes us that he was the first to discover the fact, and refers to the Proceedings of the New York Lyceum, May, 1871, for a discussion of the whole subject.

Soldering Iron and Steel.

Dr. Sieburger publishes the following methods for soldering iron and steel:—

For objects of moderate size, hard brass solder is made by fusing together 8 parts of brass and 1 part tin. Soft brass solder is composed of 6 parts brass, 1 part zinc, and 1 part tin.

For soldering small iron or steel articles, a hard silver solder composed of equal parts of fine silver and malleable brass is used, the mass being protected by borax. Soft silver solder differs from this only in the addition of $\frac{1}{8}$ part tin.

Very fine and delicate articles are soldered either with pure gold or a gold solder composed of 1 part gold, 2 parts silver, 3 parts copper.—*Scientific American*.

To Remove Rust from Iron.

Simmer the pieces in kerosene oil for a number of days. This will so soften and loosen the oxide of iron that it can be easily rubbed off.—*American Artisan*.

Culinary Essences.

BY ALBERT E. EHERT.

Flavor of Almond.

Take of oil of bitter almonds, one fluid drachm.

Alcohol, 95%, ten fluid ounces.

Water, six fluid ounces.

Dissolve the oil in the alcohol and add the water, and filter.

This flavor should not be sold without a caution as to its poisonous nature, and directions as to the quantity to be used.

Flavor of Caraway.

Take of Caraway seed, bruised, one troy ounce.

Oil of caraway seed, two fluid drachms.

Diluted alcohol, sixteen fluid ounces.

Digest for 8 or 10 days, and filter.

the much greater yield, and in the vastly improved quality, the residuum not being at all injured for use in other ways. The sulphide of carbon has frequently been employed by perfumers and others for extracting oily substances; but Dr. Vohl considers its use so greatly inferior to that of Canada oil as not really to come in competition with it. The butter can be extracted from the cacao-bean by this substance, thereby greatly improving the quality of the prepared cocoa.

Another application of the Canada oil is to the removal of the fat from bones, leaving them as white as if bleached for a long time, and perfectly adapted for use. Even the ivory of the elephant, the narwhal, and the walrus, can be greatly improved in quality by this application. Glue made from bones thus prepared is also a very superior article. An important application of this substance, if all that is claimed for it by Dr. Vohl be true, will be in the hands of the anatomist in preparing bones for skeletons. This, as is well known, generally involves the use of ether or other expensive agencies in removing the grease. The special application of the process, and the method of extracting oil from seeds, with the apparatus required, is given at length in a recent number of Dinger's *Polytechnic Journal*.—*Harper's Monthly*.

Silvering of Glass Plates and Globes.

According to Krippendorf, the silvering glass plates may be readily accomplished by the use of the following substances:—

1. Sodio-potassic tartrate; 2. A two per cent. solution of this salt; 3. Caustic ammonia; 4. Solution of silver nitrate, 1:8 (old silver bath will serve). From these the silvering and reducing liquids are prepared.

The reducing liquid is prepared by taking 900 cubic centimetres of distilled

solution of the tartrate, and, after mixing, boiling strongly together, and while the steam is issuing violently from the flask, dropping in 20 cubic centimetres of the silver solution, and boiling for another ten minutes. This solution not only keeps, but seems to improve by age. The liquid is to be filtered from the precipitated silver as it is wanted.

The silvering solution is prepared by taking 900 cubic centimetres of distilled water, and adding 80 cubic centimetres of the silver solution, and 100 drops of the ammonia solution, and filtering if necessary.

For silvering, equal volumes of the two solutions are to be carefully and separately filtered, and poured together into a flat glass dish to such a depth that the thoroughly cleansed plate shall be covered by a layer of at least one-tenth of an inch. Decomposition of the mixture takes place in ten minutes, and pure metallic silver is deposited on the plate, which is then washed, dried, and varnished. For the purpose of silvering the interior of glass globes, etc., it is sufficient to pour in successive small quantities of the mixture, turning the vessel continually, so as to keep the whole surface wet uniformly.—*Harper's Monthly*.

Process of Embalming.

Alcohol of 90 degrees, in which is dissolved a fiftieth part by weight of carbolic acid, is said to form the best liquid to inject for embalming. It penetrates the capillaries much better than when glycerine is employed as a solvent.—*Pacific Med. and Surg. Journal*.

Arsenious Acid and Albumen.

The preservation of albumen for manufacturing purposes is a problem of much interest, in view of the great use of this substance in the arts, one method consisting in the addition of a slight amount of arsenious acid, or arsenite of soda. The use of the former is, however, sometimes

inconvenient, on account of the great insolubility; and that of the latter is occasionally objectionable, on account of its alkaline action affecting the application of the albumen. For the purpose of obviating these objections, Paraf suggested the boiling of the arsenious acid with glycerine, in which it is quite soluble; after allowing the solution to cool, and to stand for twenty-four hours, a few drops may be added to the albumen. The same substance can be added to gum-arabic, paste, and other substances, to prevent fermentation, putrefaction, and the development of fungi. It will, of course, be understood that arsenic in this preparation is highly poisonous.—*Harper's Monthly*.

Transparent Green Varnish.

A beautiful transparent green varnish is made by taking a small quantity of "Chinese blue," with about twice the amount of finely-powdered chromate of potash, and stirring these in copal varnish thinned with turpentine. A thorough grinding of this mixture must be made for the purpose of intimately incorporating the ingredients, as otherwise it will not be transparent. A preponderance of chromate of potash gives a yellowish shade to the green, and a deficiency increases the amount of blue. This varnish, thus colored, produces a very striking effect in japanned goods, paper-hangings, etc., and can be made very cheaply.—*Harper's Monthly*.

Colored Cements.

A writer in *Comptes Rendus* states that colored cements which harden rapidly may be made as follows: He takes a solution of silicate of soda (sp. gr., 1.298) and adds to it, while stirring, first pulverized and previously washed, lixiviated chalk, so as to form a thick mass, like butter, to which are added, for coloring purposes, the following substances: Finely pulverized sulphuret of antimony for

black, iron-filings for gray, zinc-dust for whitish gray, carbonate of copper for bright green, oxide of chromium for deep green, cobalt blue for blue, red lead for orange, vermilion for bright red, and carmine for a violet hue. This cement hardens with in from six to eight hours, and may afterward be polished, becoming like marble.—*Druggists' Circular*.

White Gutta-percha.

The *Journal of Applied Chemistry* gives the following method of preparing this for dentists' use and for other purposes: Four ounces of pure gutta-percha are digested with five pounds of methyl-chloroform until the solution is thin enough to pass through filtering-paper. It is then filtered (an additional pound of chloroform will facilitate this), and should then be clear and nearly colorless. Alcohol is now added in sufficient quantity to precipitate the gutta-percha in a voluminous white mass, which is washed with alcohol, pressed in a cloth, and dried in the air. It must finally be boiled in water in a porcelain vessel for half an hour, and while still hot rolled into sticks. The chloroform can be separated from the alcohol by adding water, and the alcohol recovered by distillation.—*Druggists' Circular*.

Modification of the Ordinary Test for the Biliary Acids.

M. Strassburg, of Bremen, suggests (*The Practitioner*, February, 1872; from *Pflüger's Archiv für gesammte Physiologie*, Hefte x. and xi., 171) a modification of Pettenkofer's test for the presence of biliary acids in urine, which promises to be serviceable clinically, and, according to his statements, is of extreme delicacy, enabling a trace not exceeding 1/100,000ths to be readily detected. He dips a slip of filtering-paper into the urine suspected to contain the biliary acids, and to which a little cane-sugar has been previously added. The slip is withdrawn and dried; a drop or two of pure concen-

trated sulphuric acid is now applied to it by means of a glass rod. On holding the paper up to a strong light, a beautiful violet color makes its appearance.

To Relacker Brass.

The *English Mechanic* gives the following recipe: Strong sulphuric acid, two parts; water, one part; red fuming nitrous acid, one part. These must be mixed in the open air, as the gas evolved on mixing the nitrous acid with the vitriol and water is of a suffocating character; this will pass off in the course of an hour or so, during which time the mixture may be occasionally stirred with a glass rod. The bright gilded effect produced on the brass by this mixture is so good that any one trying it will not return to the use of nitric acid. The subsequent washing, drying, and lackering cannot be done too soon after the dipping, as the articles tarnish rapidly if kept unlacquered.—*Boston Journal of Chemistry.*

To Protect Woollen Fabrics from Moths.

Dr. Vorwerk recommends the following mixtures for this purpose: (1) Pure carbolic acid, 45.0 grms.; camphor and oil of rosemary, each, 30 grms.; oil of cloves and aniline, each, 5 grms.; dissolve these substances in methylated spirit, 2.5 litres. (2) Pure carbolic acid, 20.0 grms.; camphor, oil of cloves, oil of lemon-rind (*Ol. citri cort.*), nitrobenzol, each, 10 grms.; aniline, 2.5 grms.; dissolve in methylated spirit, 1.5 litre. These fluids are applied to the fabrics and furs by the aid of the so-called spray-producers. The operation, if properly done, will only be required to be repeated twice or, at most, three times a year. Since these mixtures are inflammable, the operation with the spray-producers should be performed only by daylight. Neither goods nor colors are injured by exposure to the spray.—*Boston Journal of Chemistry.*

A Brilliant Stucco White-wash.

Take clean lumps of well-burnt lime, slake in hot water in a small tub, and cover it to keep in the steam. It should then be passed through a fine sieve in a fluid form, to obtain the flower of lime. Add a quarter of a pound of whiting or burnt alum, two pounds of sugar, three pints of rice flour made into a thin and well-boiled paste, and one pound of glue dissolved over a slow fire. It is said to be more brilliant than plaster-of-Paris, and will last fifty years. It should be put on warm, with a paint-brush.—*Boston Journal of Chemistry.*

Dandruff.

A writer in the *Philadelphia Journal of Pharmacy*, after failure of all other means, tried the following: A preparation of 1 ounce of flowers of sulphur and 1 quart of water was made. The clear liquid was poured off, after the mixture had been repeatedly agitated during intervals of a few hours, and the head was saturated with this every morning. In a few weeks every trace of dandruff had disappeared, the hair became soft and glossy, and now, after a discontinuance of the treatment for eighteen months, there is no indication of the return of the disease.

Transparent Amandine.

Take of fine white honey 4 ounces, fine white soap 2 ounces; mix these well in a mortar, adding one ounce liquor potassæ, until the mixture becomes a perfect cream; rub in with caution and slowly 7 pounds of almond oil (sweet), and 1 oz. of essential oil of bitter almonds, adding to taste a sufficiency of oils of bergamot and cloves, and lastly, half a drachm of balsam of Peru.

Lavender Water.

The following is a superior preparation by Dr. Pereira: Oil of lavender (flowers)

3 drachms, oil of bergamot 3 drachms, oil of roses (ottar) 6 drops, oil of cloves 6 drops, musk 2 grains, oil of rosemary (best) 1 drachm, honey 1 ounce, benzoic acid 40 grains, rectified spirit 20 ounces, water 3 ounces.—*Boston Journal of Chemistry.*

Colors for Druggists' Show Bottles.

Amber.—Dragon's blood, in coarse powder, 1 part; oil of vitriol, 4 parts. When thoroughly dissolved, dilute with cold distilled water till the required tint is obtained. **Lilac.**—Dissolve oxide of cobalt in hydrochloric acid, adding sesquicarbonate of ammonia in excess, and afterwards sufficient ammonio-sulphate of copper to bring the desired color. **Orange.**—Dissolve bichromate of potash in water and add a little sulphuric acid. **Violet.**—Mix together solutions of nitrate of cobalt and sesquicarbonate of ammonia, adding a sufficiency of ammonio-sulphate of copper to strike the required color. **Blue.**—Take of solution of perchloride of iron 10 drops, yellow prussiate of potash 10 grains, oxalic acid 2 drachms, water 1 gallon. **Red.**—Solution of perchloride of iron 10 drops, sulphocyanide of potassium 10 grains, water 1 gallon. **Crimson.**—Iodine and iodide of potash, of each 30 grains, hydrochloric acid 1 drachm, water 1 gallon. **Green.**—Sulphate of copper 1 drachm, bichromate of potash 30 grains, strong liquor of ammonia 2 ounces, water 1 gallon.—*Boston Journal of Chemistry.*

Bandoline.

1. Take of Carrageen or Irish moss,
Water, of each any quantity to make,
when boiled, a thick solution;
strain through muslin, and when
nearly cold add to each pint—
Alcohol, } of each one fluid
Cologne water, } ounce.
Oil of cloves 8 drops.
After mixing the whole thoroughly, keep
it in a corked bottle in a cool place.

2. Take of Quince seed... 2 or 3 drachms.
Water 1 pint.

Add the alcohol, spirit, and oil of cloves as directed in No. 1.

3. Take Gum arabic (clean) ... 2 ounces.
Rose-water..... 6 ounces.
Dissolve and add of Tincture of Cochineal q. s. to color.

4. Take Gum tragacanth.... 1½ drachm.
Water 8 ounces.
Alcohol 3 ounces.
Ottar of Roses 10 drops.

Macerate for twenty-four hours and strain.

5. Take Castor-oil..... 2 ounces.
Spermaceti 1 drachm.
Annotto ¼ drachm.
Oil of bergamot ... 1 drachm.
Ottar of roses..... 5 drops.

Mix with heat and strain.

6. Take Oil of Almonds 1 ounce.
White wax 1 drachm.
Tincture of mastic... 3 drachms.
Oil of bergamot.... 1 drachm.

Melt the wax in the oil with heat, and add the tincture of mastic and the perfume.—*Drug. Circular.*

Shaving Cream.

- Take Naples soap (genuine) ... 4 ounces.
Castile soap (powdered) ... 2 ounces.
Honey..... 1 ounce.
Ess. of ambergris 5 drops.
Oil of cassia 5 drops.
Oil of nutmegs..... 5 drops.

Mix.—Another formula is the following:

- Take White wax ¼ ounce.
Spermaceti ¼ ounce.
Almond oil ¼ ounce.

Melt, and whilst warm beat in

- Windsor soap 2 squares,
previously reduced to a paste with

Rose water..... q. s.

—*Druggists' Circular.*

Shaving Soap.

Melt seven pounds of clarified lard in a porcelain vessel by a salt-water bath or by steam heat under fifteen pounds pres-

sure; then run in three and three-quarter pounds of potash-lye, containing twenty-six p. c. of the alkali, very slowly, agitating the whole time. When about half the lye is in the mixture begins to curdle; it will, however, at last become so firm that it cannot be stirred. The cream is then finished, but is not pearly. It will assume that appearance by long trituration in a mortar, gradually adding three ounces of alcohol, in which have been dissolved two drachms of essential oil of almonds.—*Druggists' Circular*.

Liquid Shampoo.

Take Bay rum 2½ pints.
Water... ½ pint.
Glycerine..... 1 ounce.
Tinct. of cantharides... 2 drachms.
Carbonate of ammonia. 2 drachms.
Borax..... ½ ounce.

Dissolve the salts in the water and add the other constituents gradually.—*Druggists' Circular*.

Verbena Water.

A good article may be made in the following way:—

Take Rectified spirit 1 pint.
Grass-oil (verbena-oil)... 3 drachms.
Oil of lemon-peel..... 2 ounces.
Oil of orange-peel..... ½ ounce.

Mix; let it stand a few hours, filter if necessary, and fill in bottles. A very much superior article, also sold in commerce under the name of *Extrait de Verbène*, is made according to the following recipe:—

Take Rectified spirit 1 pint.
Oil of orange-peel 1 ounce.
Oil of lemon-peel..... 2 ounces.
Oil of lemon..... 1 drachm.
Grass-oil (verbena-oil). 2½ drachms.
Essence of orange-flowers 7 ounces.
Essence of tuberose ... 7 ounces.
Essence of rose..... ½ pint.
—*Druggists' Circular*.

An Excellent Varnish for Harness.

Procure at the druggist's or apothecary's store half a pound or a pound of gum-shellac, according to the quantity desired; break the scales fine, and put them in a jug or bottle; add good alcohol sufficient to cover the gum; cork tightly, and place the jug where it will be kept warm. In about two days, if the bottle or jug is shaken frequently, the gum will be dissolved and ready for use. If the liquid appears as thick as thin molasses, add more alcohol. To one quart of the varnish add one ounce of good lampblack and an ounce of gum camphor. Such varnish will not render leather hard; but it will keep the harness from becoming soaked with water, and it will keep the surface clean and neat for a long time. A coat of such varnish will effectually prevent the oil in the leather from soiling one's hands. Nothing is better to render a farmer's boots waterproof than an occasional coat of this leather-varnish.—*Druggists' Circular*.

Paraffined Paper.

Dr. W. R. McNab recommends in the *Medical Times and Gazette* paraffined paper as a cheap and light covering for dressings. It is prepared by first saturating a thin sheet of paper with an excess of paraffin, and afterwards removing the excess by placing the sheet between blotting-paper, and passing a hot iron over the whole.

To Stop Pin-Holes in Lead.

Pin-holes in lead water-pipes can be stopped by placing the square end of a tenpenny nail on the hole, and hitting it two or three light blows with a hammer.—*Trade Journal*.

To Distinguish Artificial Fruit Syrups.

It appears that a considerable trade is carried on in fruit syrups, which on the

lucus a non lucendo principle, contain no fruit whatever, but are artificially prepared from solutions of sugar, flavored with ether and colored with aniline dye. There are fortunately various tests for this disgraceful imposture—such as nitric acid, which, when mixed in equal volume with real fruit syrup, causes no change, but turns the imitation yellow. With solution of carbonate of soda, the artificial remains unchanged, and the real becomes lilac or green, so that the preventives against making our interior an ethereal dye-house are easily obtained and put in force.—*Food Journal*.

Concentrated Emulsion of Almonds (M. Reynolds).

Take of—

Blanched sweet almonds,
Sugar,
Glycerine, each..... 30 parts.
Powdered gum arabic.... 4 “
Water..... 60 “

Reduce to a uniform paste, strain and evaporate at a temperature not exceeding 60° F. to the condition of a nearly solid extract. In order to prepare at any time, from this concentrated emulsion, the ordinary almond emulsion, add to two drachms of it enough simple water, or (more elegant) water of orange-flowers, to make an ounce of fluid.—*Journal de Pharm. et de Chim.*, April, 1872.

Brown Water of Dr. Warlomont.

Take of—

Borax..... 10 parts.
Extract of hyoscyamus... 5 “
Decoction of mallow roots. 180 “

Mix.

Employed in ulcerative keratitis, catarhal ophthalmia, and other acute affections of the eyes. To apply it, a compress should be wet with it (after shaking) and firmly bound on the eye. The compress should be kept wet for half an hour and then removed for two hours, at the end of which time it should be reapplied as before.—*Ibid*.

To Develop the Color of Chlorine Gas at Night.

Place a sheet of white paper behind the jar and burn magnesium, so that its light will fall fully upon it.—*Chemical News*.

Fumigating Pastilles (French Codex).

Take of Gum benzoin 4 parts.

Balsam of tolu..... 1 “
Santalum album..... 1 “
Light wood charcopal.. 25 “
Nitrate of potash..... 2 “
Mucilage of tragacanth q. s.

Powder and mix together with the mucilage into a firm paste, and divide into cones three centimetres high.

Cosmetique d'Alibert.

Take of almond soap ... 6 parts.

Cucumber pomade,
or cocoa butter ... 45 “
Rose water or water
of cherry-laurel... 500 “

Dissolve the soap in a little of the water, mix the fatty matter with it, and add, little by little, the remaining water.

A hygienic cosmetic for softening and benefiting the skin. Its application should be followed by free washing with cold water.—*Jeannel's Formulaire*.

Pommade Divine (Piessé).

Take of Spermaceti 125 parts.

Washed lard 250 “
Almond oil 875 “
Powdered benzoin 125 “
Sliced vanilla bean 42 “

Digest in a water bath for six hours and then decant.—*Ibid*.

Artificial Powder of Violets.

Take of Starch..... 600 parts.

Powder orris-root.... 100 “
Flowers of Acacia far-
nesiana..... 10 “
Powdered cloves 1 “

Mix.—*Ibid*.

Cement to Resist Sulphuric Acid.

Take caoutchouc; melt this by a gentle heat, add from six to eight per cent. of the weight of tallow, taking care to keep the mass well stirred; add dry slaked lime, so as to make the fluid mass the consistency of soft paste; and lastly, add twenty per cent. of red lead, whereby the mass, which otherwise remains soft, becomes hard and dry. This cement resists boiling sulphuric acid. A solution of caoutchouc, in twice its weight of raw linseed oil, aided by heating, and the addition thereto of an equal weight of pipe-clay, yields a plastic mass which also resists most acids.—*Boston Journal of Chemistry.*

Pommade.

Take of Huile philocome,

Beef marrow 10 parts.
Oil of almonds 10 “
Oil of corylus avellanna, 10 “

Melt at a mild heat and perfume to taste.—*Jeannel's Formulaire.*

Carrotine for Coloring Butter.

A writer in *Dingler's Polytechnisches Journal* (cc. 83) recommends carrotine, the coloring matter of carrots, obtained by exhausting the dried and pulverized roots with bisulphide of carbon, as better adapted for coloring butter than annatto, the carrotine being tasteless and scentless.

Polish for Patent Leather.

The following is from Cooley:—

Whites of two eggs.
One tablespoonful of spirits of wine.
Two large lumps of sugar.
Finely-powdered ivory-black,

as much as may be sufficient to produce the necessary blackness and consistence. To be laid on with a soft sponge lightly, and afterwards gently rubbed with a soft cloth.—*Chemist and Druggist.*

Incense.

Sandal wood in powder . . . 1 lb.

Cascarilla bark $\frac{1}{4}$ lb.
Gum benzoin $\frac{1}{4}$ lb.
Grain musk $\frac{1}{4}$ oz.
Powdered nitre $2\frac{1}{4}$ oz.

—*Ure's Dictionary of Arts.*

Pommade Cosmetique.

Take of Beef's marrow,

Beef suet, each 15 parts.
Oil of almonds 4 “
Balsam of Peru 2 “
Cut vanilla bean 1 “

Heat by means of a water bath for one hour; strain and rub up in a mortar till completely cold.—*Jeannel's Formulaire.*

Syrup of Coffee.

This preparation is of great use to those who have long journeys to make. Take $\frac{1}{4}$ lb. of the best ground coffee; put it into a saucepan, containing three pints of water, and boil it down to one pint. Cool the liquor, put it into another saucepan, well scoured, and boil again. As it boils, add white sugar enough to give it the consistency of syrup. Take it from the fire, and when it is cold put it into a bottle, and seal. When travelling, if you wish for a cup of good coffee, you have only to put two teaspoonfuls of the syrup into an ordinary coffee-pot, and fill with boiling water. Add milk to taste, if you can get it.—*Food Journal.*

A la Vinaigrette.

This is a sauce much used in Paris for cold viands; and in a country like England, where, amongst the middle and lower classes, suppers are an institution, and cold joints, etc., often an incubus—as certain linendrapers say of their old stock—a few words about it may be acceptable. Sauce *à la vinaigrette* is composed of salad oil, vinegar, finely-chopped parsley, and shallots, onions, or chives, with pepper and salt to taste. For those who have no objection to oil, this sauce is infinitely superior to mere vinegar, pepper, and salt. It is suitable for any kind of cold meat, and especially for cold

calves' head, and is admirable with cold salmon, turbot, or indeed any sort of cold fish. Hard-boiled eggs also eat extremely well with sauce *à la vinaigrette*; so do many kinds of cold vegetables, and especially asparagus: in fact, this is quite as often eaten cold as hot in Paris, and always *à la vinaigrette*. Cold artichokes are also very largely consumed with this sauce. When used with cold meat, and particularly with calves' head, the addition of a few capers to the sauce is a great improvement; and with cold roast meat a ghirkin, cut up fine, is excellent. As this is a sauce produced almost entirely out of the cruet-stand, it suits well with our English habits. You rub up the salt and pepper with a little vinegar, then add as much oil as you please, with chopped parsley, shallot, ghirkin, or capers, according to convenience or taste.—*Food Journal*.

Test for Sulphur in Coal Gas.

A bead of carbonate of soda is formed on a fine platinum wire and passed along the edge of the gas flame. The sulphides and sulphites formed are then placed in the illuminating flame, where sulphide of sodium alone will remain unreduced. The bead is then crushed on a porcelain plate, and a drop of a solution of *nitro-prusside of sodium* placed upon it. The slightest trace of sulphur will be indicated by a beautiful violet color, a reaction fifty times more delicate than that with silver foil.—*Jour. Applied Chemistry*.

Thawing Frozen Ground.

The *Scientific American* contains a notice in regard to thawing frozen ground in winter for purposes of excavation. The writer claims to have ascertained that a small jet of steam, applied under-ground, will remove the frost in a short time from a very large extent of earth. This is done by forcing steam, under pressure from a boiler, under the earth in a suitable pipe; and as the fluid escapes it penetrates the soil, is condensed, and parting with its

latent heat, thaws out the ground as indicated.—*Harper's Monthly*.

Fire Kindlings.

In France a very convenient and economical kindling is made by dipping corn-cobs for about one minute in a bath composed of 60 parts melted resin and 40 parts tar. They are next spread out to dry on metallic plates, heated to the temperature of boiling water. They are then assorted, according to size, and tied up in bundles. They sell for one to two centimes (half cent) apiece. The "Compagnie des allumettes landaise" employs thirty workmen, and makes about \$40,000 worth a year.—*Richmond & Louisville Journal*.

Remedy for Catarrh.

A correspondent of *The Chemist & Druggist* writes as follows of a remedy used in Germany for catarrh. It is prepared in the following manner: A wide-mouth glass-stoppered bottle is filled with amianth, or better with cotton, and then the following mixture is poured on, so that the cotton or amianth is perfectly saturated with it:—

Acid. carbolic puriss. . . . 5.0 (3iv.)
 Liq. Ammon. caustic. . . . 6.0 (3iss.)
 (spec. gravity 0.960.)
 Aquæ destillat. . . . 10.0 (3ij., 3ij.)
 Spirit. Vini. rectificatiss. . . . (3iv.)

The vapors are drawn into the nose frequently during the day, and now and then inhaled into the mouth. A medical gentleman of Stettin, who is renowned not only for his skill as a physician, but likewise for the tremendous catarrh that troubles him regularly every winter, has used this olfactorium anticatarrhoicum with perfect success on his own person, and afterwards on many of his patients, and recommends it highly.

Culture of Tea Plant.

Mr. Routsey says in the *Bristol Journal* (England): "Having found the Chinese green tea plant (*Camelia viridis*) to be

more hardy than some other shrubs which endure the open air in this neighborhood, I have tried it upon the Welsh mountains, and found it succeed. I planted it in a part of Breconshire, not far from the source of the Usk, about 1,000 ft. above the level of the sea, and higher than the limits of the native woods—consisting of alder and birch. It endured the last winter, and was not affected by the frost of May. It has now made several vigorous shoots, and I have no doubt of its thriving very well."

Distillation of Potatoes.

M. Zetterlund says that in mashing potatoes for distillation he found that, in using sulphurous instead of acetic acid or sulphur, he obtained a larger proportion of alcohol, the fermentation was more complete, and there was less residual acid in the mash.—*Food Journal*.

Bouillon Cakes.

Bouillon cakes, according to M. Reinsch, are made as follows:—Lean beef or veal is cut into thin slices. These are spread on a sieve and dried in hot air at a temperature of 100° C. After awhile they are dry enough for pounding in a mortar, where the necessary quantity of salt is added. The preparation is next roasted with flour, etc., in the proportion of 11 of fat to 20 of flour, 64 of beef, and 4 of salt. The cakes are packed in tin boxes.—*Food Journal*.

Improved Soap Bubbles.

We find in an exchange a paragraph which teaches the art of blowing soap-bubbles that will show the changing colors of the rainbow. The directions are as follows: Take three-quarters of a pint of water that has been boiled and become cold, and put into it a quarter of an ounce of Castile soap, cut up fine. Put this into a pint bottle, and set it in hot water, in a saucepan, on the fire; main an hour or so, it is a good shakin

solved. Let the fluid stand quiet for the impurities and coloring matter of the soap to settle, then pour off the fluid and add to it four ounces of glycerine, and your soap-bubble solution is ready. In an ordinary way you may blow the bubbles easy with a tobacco-pipe, but if you wish to attain scientific perfection, you had better employ a glass pipe. By adding a larger quantity of the glycerine, you may make these bubbles so strong that you can play battledore with them.—*Jour. Applied Chemistry*.

To detect Sulphuric Acid in Vinegar.

The salts of barium are far too delicate a test for free sulphuric acid in vinegar. When it is made by the oxidation of alcohol, the water used for diluting the spirits, in many localities, contains sufficient sulphate of lime or other sulphates, to give a decided reaction with chloride barium; and if the vinegar be made from cider, it will generally give evidence of the presence of a sulphate with this test, even when the sample is pure and free from the usual adulteration.

The following process will detect the five-hundredth part of free sulphuric acid, and is sufficiently accurate for all practical purposes.

An ounce of the vinegar to be examined is put into a small porcelain capsule, over a water-bath, and evaporated to about half a drachm, or to the consistence of a thin extract; when cool, half a fluid ounce of stronger alcohol is added and thoroughly triturated. The free sulphuric acid, if present, will be taken up by the alcohol to the exclusion of any sulphates.

Allow the alcoholic solution to stand several hours, and filter; to the filtrate add one fluid ounce of distilled water, and evaporate the alcohol off by gentle heat, over a sand-bath; when free from alcohol it is set aside for several hours

then again filtered.

the filtrate, acidulated with hydro

chloric acid, add a few drops of a solution of chloride barium, and a white precipitate of sulphate of barium will result, if the sample of vinegar has been adulterated with sulphuric acid.—*Amer. Journal of Pharmacy*, April, 1872.

To Remove Paint from Stone.

A correspondent of the London *Builder*, having to clean a pulpit and sedilia in which the carving and tracery were almost filled up with successive coats of paint, was informed that common washing soda, dissolved in boiling water, and applied hot, would remove it. He says: "I found that 3 lbs. of soda (cost 2½d.) to a gallon of water, laid on with a common paint-brush, answered the purpose admirably, softening the paint in a short time, so that it was easily removed with a stiff scrubbing-brush; afterward, on adding a few ounces of potash to the solution, it softened more readily than with soda only. The stone in both cases was a fine freestone."—*Louisville Journal*.

Cheap Mode of Preparing Pure Dextrine.

Five hundred parts of potato-starch are mixed with 1,500 parts of cold distilled water and 8 parts of pure oxalic acid, and this mixture placed in a suitable vessel on a water-bath, and heated until a small sample tested with iodine solution does not produce the reaction of starch. When this is found to be the case the vessel is immediately removed from the water-bath, and the liquid neutralized with pure carbonate of lime. After having been left standing for a couple of days the liquor is filtered, and the filtrate evaporated upon a water-bath until the mass has become quite a paste, which is removed by a spatula, and, having been made into a thin cake, is placed upon paper and further dried in a warm plate; 220 parts of pure dextrine are thus obtained.—*Louisville Journal*.

Paste that will Keep a Year.

Dissolve a teaspoonful of alum in a quart of warm water. When cold stir in as much flour as will give it the consistency of thick cream, being particular to beat up all the lumps; stir in as much powdered resin as will lay on a dime, and throw in half a dozen cloves to give a pleasant odor. Have on the fire a tea cup of boiling water, pour the flour mixture into it, stirring well all the time. In a very few minutes it will be the consistency of mush. Pour it into an earthen or china vessel; let it cool; lay a cover on, and put in a cool place. When needed for use, take out a portion and soften it with warm water. Paste thus made will last twelve months. It is better than gum, as it does not gloss the paper, and can be written on.—*Journ. Applied Chemistry*.

Furniture Oil.

Take four ounces of bruised alkanet root and one gallon of linseed oil; boil together in a glazed pipkin until the color is extracted from the alkanet; cool and strain for use.—*Physician & Pharmacist*.

Blue Ink.

Oxalic acid, one drachm; distilled water, six drachms; best Prussian blue, six drachms; rub the latter with the solution of acid to a thick paste, and add two ounces of pulverized gum arabic, and one quart of soft water. Let it stand to settle for 24 hours, and pour off the clear portion for use.—*Physician & Pharmacist*.

To remove Fruit or Acid Stains from Carpets.

Dissolve one ounce of carbonate of ammonia in one quart of warm rain-water, and carefully apply to the stains with a sponge.—*Physician & Pharmacist*.

To take Bruises out of Furniture.

Wet the part with warm water; double a piece of brown paper five or six times, soak it in warm water, and lay it on the place; apply on that a warm, but not hot, flat-iron till the water is evaporated.

If the bruise be not gone, repeat the process. After two or three applications, the dent or bruise will be raised to the surface. If the bruise be small, merely soak it with warm water, and hold a red-hot iron near the surface, keeping the surface continually wet—the bruise will soon disappear.—*Druggists' Circular*.

Our Writing Fluids.

ARCHIBALD PATTERSON.

Concerning the composition of ink. When we look at the usual source, viz., galls, one would at first imagine that gallic acid wrought a most important part in its manufacture, but such is not the case. The galls are used in the process, not because they are rich in gallic acid, which they are not, although it is from them we obtain most of the gallic acid of commerce, but because they contain a high percentage of tannic acid.

A paper on the commercial value of dyestuffs, which appeared in the *Pharmaceutical Journal* of last January, says, in speaking of galls, that the following may be considered as the composition of an average sample of gall nuts:—

Tannic acid	65.0
Gallic acid	2.0
Ellagic acid.....	2.0
Luteo-gallic acid.....	2.0
Chlorophyll and volatile oil...	.7
Brown extractive matter.....	2.5
Gum.....	2.5
Starch.....	2.0
Lignine.....	10.5
Sugar, albumen, etc., and ash..	1.3
Water	11.5

100.0

Thus we see that galls only contain a very small proportion of gallic acid. This substance is obtained by exposing the galls for a number of weeks, thereby inducing fermentation, in which the tannic acid becomes oxidized, and converted into gallic acid. The action that takes place is: the protosalt of iron, say the sulphate, is decomposed, the iron combines with the tannic acid, forming a

dark bluish-black precipitate, called the tanno-gallate of iron, while the sulphuric acid is set free, and remains as such in the ink. The term "tanno-gallate of iron" is apt, as already shown, to cause a misrepresentation of the quantity of gallic acid, which although it may, and frequently does exist in ink, must be in very small proportion.

If the salt of iron be pure, which is seldom the case in commerce, the protosalts alone should give the black characteristic precipitate with tannin, while it requires a persalt of iron to produce the same result with gallic acid. As this tanno-gallate of iron (?) is a precipitate, and not soluble in the ink, it becomes necessary to add something to give the fluid a body or consistence which keeps this precipitate in suspension; hence the use of gum-arabic, which invariably forms part of the formula for ink.

The proportions which appear most suitable, and upon which most dependence can be placed, are—bruised galls, one pound; to this add one gallon of boiling water, and one-third of the weight of the galls, viz., five ounces, and a third of sulphate of iron, in solution; also three ounces of gum-arabic previously dissolved, and a few bruised cloves, or a few drops of creosote or carbolic acid dissolved in methylated spirit. It is better to allow the galls to macerate for twenty-four hours, then to strain the infusion and add the other ingredients.

I cannot do better at this part of the subject than offer you a formula used and recommended by that eminent chemist, the late Dr. Penny, of Anderson's University in this city.

Take of bruised galls twelve ounces, macerate for a week in one gallon of cold water, then add six ounces of sulphate of iron in solution, also six ounces of mucilage of gum-arabic, and five or six drops of creosote.

The learned doctor has here taken advantage of a fact well known to chemists—viz., that tannic acid is more soluble in cold than in hot water—hence the cold maceration is prescribed, which I believe is pretty generally employed by first-class ink manufacturers.

The celebrated blue-black ink prepared by Messrs. Duncan, Flockhart, and Company, of Edinburgh, is said to be prepared by the process of cold maceration. A formula, said to be that of Messrs. Duncan, Flockhart, and Company, was printed and circulated some years ago by an Edinburgh gentleman, of which the following is a copy, and which explains the process more fully:—

Receipt for Preparing Blue-Black Writing Ink.

(Which also serves well for Copying Ink.)

Blue aleppo galls (free from insect perforation).....	4½ ounces.
Bruised cloves.....	1 drachm.
Cold water.....	40 ounces.
Purified sulphate of iron...	1½ "
Pure sulphuric acid (by measure).....	35 minims.
Sulphate of indigo (in the form of a thinnish paste, and which should be neutral, or nearly so).....	0½ ounce.

Place the galls, when bruised, with the cloves, in a fifty-ounce bottle, pour upon them the water, and digest, shaking often daily for a fortnight. Then filter through paper in another fifty-ounce bottle. Get out, also, the refuse of the galls, and wring out of it the remaining liquor through a strong clean linen or cotton cloth into the filter, in order that as little as possible be lost. Next put in the iron, dissolve completely, and filter through paper. Then the acid, and agitate briskly. Lastly

the indigo, and thoroughly mix by shaking. Pass the whole through paper. Just filter out of one bottle into the other till the operation has been completed.

On a large scale, this fine ink may be made by percolation, as Duncan, Flockhart, and Company, and others in Edinburgh, do it, the above being said to be their recipe.

The weights used are avoirdupois, and the measures used are apothecaries' measures.

Note.—No gum or sugar is proper, and on no account must the acid be omitted. When intended for copying, 5½ ounces galls are the quantity.

You will observe that there are several peculiarities about this writing-fluid, viz.:—First, the cold process is used. Second, the want of gum. Third, the use of sulphate of indigo, which is a solvent for the black precipitate, the tanno-gallate of iron; hence the gum arabic is not required, as it is only used to suspend this precipitate. Fourth, the deficiency of iron, which may be accounted for by the *pure* protosulphate being used, which cannot contain, or should not contain, any oxide, so that all the iron is free to combine with the tannin. Fifth, the use of free sulphuric acid, which is generally looked upon as detrimental to writing fluids, but which must be introduced here for some purpose, of which I am as yet ignorant.

Thus far I have only spoken of high-class inks, but it frequently occurs that an article is required which is to be sold at a cheaper rate than that wholly made from galls; and the vegetable world gives us an ample range of materials to select from, many of which contain tannin in fair quantity.

In this case other ingredients may be substituted instead of part of the galls; thus we often see logwood substituted, and catechu, sumach, and oak-bark may be used for the same purpose. Many other substances, such as elm-wood, elder, chestnut, beech, willow, plum, cherry, and

poplar, all contain a certain amount of astringent properties, but none of them are to be compared to galls, and are not likely to supersede them in the manufacture of ink, so long as galls can be had for anything like a fair price. The chemist cannot decide in fixing the proportions required for making ink as he would do almost any other chemical problem, as the substances used are not all of the same relative value, nor, indeed, may two samples of the same substance be equally rich in the material required, viz., tannin, so that he must make an analysis every time he prepares his ink, to estimate the value of his tannin producer, or, what is more convenient, he must fix on certain proportions which are known to produce (by experiment) good results, and do his best in selecting his materials up to a fair average standard.

Thus we see, that although galls are used at present as the most suitable substance for making ink, still any failure or stoppage of supply in the production of galls can never now leave us entirely dependent on that source for the preparation of our "writing fluids."

It would be impossible, and, if possible, would be uninteresting, to mention all the substances which have found their way into formulæ for inks, many of which are not only foolish, but incompatible, showing a want of chemical knowledge.

Let us now glance at the properties of the various ingredients used in the process. If we use an excess of galls we simply throw away money, and render the ink more liable to mould. If we use an excess of iron, the galls being insufficient to decompose it, the characteristic color of its oxide is soon shown by the writing becoming brown. The use of an excess of gum causes the ink to clog the pens, and the writing to be wanting in fluency. About twenty-five years ago an ink named *Japan ink* was very much in use; it produced a beautiful glossy appearance when written, but

clogged the pen so much that it soon fell into disuse; its defect was too much gum. The water should be as soft as possible—that is, it should contain no lime, or other earthy matter; hence rain-water, or, better, distilled water, is frequently prescribed in receipts for making ink. The cheapest ink which has hitherto been introduced is one composed of a saturated solution of logwood, obtained by boiling twenty-two pounds of logwood in a sufficiency of water to produce, after being strained, fourteen gallons of liquor; to this decoction one pound (avoirdupois) of yellow chromate of potash (not bichromate) is added in solution; the proportions are one thousand parts of solution to one of chromate; the change of color is not an immediate one, but gradually becomes darker. The experiment may be tried, on the small scale, by using logwood a quarter of a pound boiled in water to produce two pints, to which, when strained, add twenty grains of chromate of potash in solution.

We will now glance at the composition of "writing fluids" used for special purposes; thus we know that writing which is intended to be copied is written with ink containing either gum, sugar, treacle, glycerine, or some such substance, which causes the writing to retain moisture, so that a copy of it may be produced even after the original writing has become dry, by being simply dampened and pressed.

The following formula requires no press, but may be copied by placing a damp sheet of copying-paper on the writing intended to be copied; above this sheet of copying-paper a sheet of ordinary writing-paper must be placed and then pressed with a paper-knife.

Copying-Ink.

Mix—Thirty grains of extract of logwood.

Seven grains of crystal sod.

Half an ounce of water.

Boil till dissolved; then, while stirring

well, add thirty grains of glycerine, one grain of chromate of potash, previously dissolved, and four grains of powdered gum-arabic.

Indestructible Ink for Deeds, etc.

Dissolve twenty-five grains of powdered gum copal in two hundred grains of lavender oil by the aid of a gentle heat; then add two and a-half grains of lamp-black, and half a grain of powdered indigo.

Another for the same purpose.

In eighteen fluid ounces of water boil shellac, two ounces, and borax, one ounce; when cold filter and mix with one ounce of gum-arabic dissolved in two ounces of water, to which add powdered indigo and lamp-black as much as may be required.

Red Ink

Is commonly prepared by boiling Brazil wood, two ounces, in thirty-two ounces of water, to which add, after the decoction has been strained, half an ounce of chloride of tin, and one drachm of powdered gum-arabic; then evaporate to sixteen fluid ounces.

Or,

Dissolve carmine, one drachm, in half a drachm of liq. ammon. fort. (sp. gr. 880), then dissolve twenty grains of powdered gum-arabic in three ounces of water, which add to the dissolved carmine.

Blue Ink

May be prepared by dissolving two or three ounces of sulphate of indigo in a gallon of water; or by rubbing together one ounce of oxalic acid, and two ounces of fine Prussian blue, to which add one quart of boiling water.

Ink Powder

May be prepared by mixing—

Powdered galls, four ounces.

Powdered sulphate of iron, one ounce.

Powdered gum-arabic, one ounce.

Powdered white sugar, half an ounce
Powdered cloves, one drachm.

To these proportions add of water one quart, and macerate for an hour or two.

Note, the quantity of sulphate of iron is small because it has been dried, and has thus lost the weight of water evaporated.

Ink in Cakes

May be prepared by evaporating good ink to dryness in shallow dishes, but the best results are obtained by dissolving Chinese ink in water.

Marking-Ink.

This substance is so well known that little may be said on the subject. The process is founded on the chemical fact, that by applying heat to a salt of silver in combination with other ingredients, the writing becomes immediately, and should remain permanently black; the formula of Professor. Redwood is a good one:—

Dissolve separately—nitrate of silver one ounce, crystal carbonate of soda one and a half ounces; mix the solution, and collect the precipitate on a filter; wash well, then introduce the moist precipitate into a mortar, and add eight scruples of tartaric acid; triturate till effervescence ceases; then add of liq. ammoniæ fort. a sufficient quantity to dissolve the tartrate of silver, to which add four fluid drachms of archil, four drachms of powdered white sugar, and twelve drachms of powdered gum-arabic, and make up to six fluid ounces, if required, with distilled water.

Crimson Marking-Ink

Is prepared by adding six grains of carmine to the liquor ammoniæ of the above formula, but it soon loses its crimson color, and becomes, like other marking-inks, a black color.

In conclusion, I cannot lay aside this subject without referring to the beauty, brilliancy, and variety of color pro-

duced from aniline, whereby we can procure any shade from the most brilliant scarlet to the most sombre black, and should we at any time be deprived of ink from the present sources, we may rest content that so long as our coal fields yield their sparkling riches, so long may we, without fear, look forward to an unlimited supply of "Our Writing Fluids."—*Chemist and Druggist*.

Diamond Cement.

Isinglass, soaked in sufficient water to render it soft, is dissolved by the aid of a gentle heat, in as small a quantity of acetic acid as possible. In each ounce of this solution dissolve 5 grains of ammoniacum, and add a solution of 15 grains of mastic, previously dissolved in 90 minims of alcohol, 65 c. p. Mix well together.—*Canadian Pharmacist*.

Verbena Water.

A good article may be made in the following way:—

Take Rectified spirit 1 pint.
 Grass-oil (verbena-oil) . . 3 drachms.
 Oil of lemon-peel 2 ounces.
 Oil of orange-peel $\frac{1}{2}$ ounce.

Mix; let it stand for a few hours, filter if necessary, and fill in bottles. A very much superior article, also sold in commerce under the name of *Extrait de Verbène*, is made according to the following recipe:—

Take Rectified spirits 1 pint.
 Oil of orange-peel 1 ounce.
 Oil of lemon-peel 2 ounces.
 Oil of lemon 1 drachm.
 Grass-oil (verbena-oil) . 2 $\frac{1}{2}$ drachms.
 Ess. of orange-flowers . 7 ounces.
 Essence of tuberose . . . 7 "
 Essence of rose $\frac{1}{2}$ pint.

—*Ibid.*

Silvering Glass.

The fluid for silver-plating glass consists essentially of two liquids, one being an ammoniacal solution of nitrate of silver, and the other a tartar

similar salt. These are mixed before application and poured over the glass plate or into the glass vessel, when the silver salt will become decomposed, metallic silver being deposited. When this has acquired the desired thickness, the rest of the fluid is poured off, the plate washed with pure water, and dried. The solutions are prepared according to the following formula:—

Take Nitrate of silver 2 ounces.
 Water 3 fl. "
 Rectified spirits 3 fl. "

Dissolve and add

Liquor ammoniæ 1 fl. ounce.

After letting the mixture stand for a short time filter, and add to each ounce of it

Grape sugar $\frac{1}{2}$ ounce
 previously dissolved in a mixture of
 Water $\frac{1}{2}$ pint.
 Rectified spirits $\frac{1}{2}$ "

After three or four hours' repose filter, and apply to the surface of the glass, which should be warmed to about 160° F.—*Ibid.*

Use of Hæmatoxylin for Staining Animal Tissues.

In the *Philadelphia Medical Times* of July 1 Dr. J. W. S. Arnold thus describes his method of using hæmatoxylin in animal microscopy, as originally suggested by Müller.

The ordinary logwood extract is finely pulverized in a mortar, and about three times its bulk of alum (in powder) added. The two ingredients are well rubbed up together, and mixed with a small quantity of distilled water. The complete admixture of the alum and hæmatoxylin is necessary, and this will require fifteen to twenty minutes' vigorous stirring. More water may now be poured on, and the solution, after filtration, should present a clear, somewhat dark violet color. If a dirty red is obtained, more alum must be incorporated, and the mixture again filtered. By always having an excess of both alum and hæmatoxylin in the mortar, a satu-

rated solution can be obtained, which, after filtration, may be combined with alcohol,—one ounce of the logwood fluid with two drachms of seventy-five per cent. alcohol. I have found that a much better color can be had by allowing the mixture, after thorough trituration, to stand for several days before filtering and adding the alcohol. Should a scum form on the surface of the liquid after it has been some time made, a few drops of alcohol and careful filtering will be all that is required. With a strong solution, such as has been described, the coloring is very rapid, requiring but a few minutes; whereas, if a slower tinting be desired, the fluid may be diluted with a mixture of one part alcohol and three parts water. Whether the tissue has been previously hardened in alcohol or in any of the chrome compounds, it is colored equally well,—the nucleus of a most brilliant purple; the cell-body, of a distinct neutral tint. An *over-staining* causes an almost perfect blackening of the nucleus, while the protoplasm becomes purple. In many instances where carmine has given but indifferent results, hæmatoxylin will be found to succeed most admirably. As to the stability of the coloring, I need only remark that specimens tinted and mounted in December, 1869, show as perfectly as when first put up.

I would conclude with the following method of treating pathological new formations (histoid tumors), etc. :—

The cut is placed for the required time in the hæmatoxylin fluid, and is then immersed in distilled water to remove the crystals of alum which might otherwise adhere to the surface of the tissue. From water the section is transferred to seventy-five per cent. alcohol, when, after soaking for from ten to fifteen minutes, it is clarified in oil of cloves, and may be either mounted immediately in balsam dissolved in chloroform, or in damar varnish.

It might appear contrary to all that has been written on the subject of treating tissues to advise that the section should only be placed in moderately

strong alcohol before clarifying and mounting, but by means of oil of cloves and the process I have given, none of the curling up and distorting will follow, which cannot be avoided when absolute alcohol, benzole, or turpentine is employed to dehydrate and render transparent.

Artificial Milk used during the Siege of Paris.

At a meeting of the Liverpool Chemists' Association, Mr. J. T. Armstrong exhibited specimens of artificial milk and butter used by the inhabitants during the siege of Paris. The mode of preparing the "siege milk" is as follows:—47 grms. of finely-powdered sugar, 30 grms. of the white of an egg, or a sufficient proportion of gelatine, one part of warm water, and about 1 grm. of carbonate of soda, are mixed with 60 grms. of a pure and tasteless oil, or fat obtained by frying; by agitation a pasty liquid is obtained, which, when diluted with about an equal bulk of water, has the same nutritive value and chemical composition as milk. —*Canadian Pharmacist.*

To Coat Steel with Silver.

In order to deposit silver upon steel it is necessary to first coat the article with copper. The solution which I have found to answer best for this purpose is composed of

Carbonate of potassa.....	4 ounces.
Sulphate of copper.....	2 "
Liquid ammonia (about).....	2 "
Cyanide of potassium.....	6 "
Water (about).....	1 gallon.

Dissolve the sulphate of copper in boiling distilled or rain water, and when cold add the carbonate of potassa and ammonia. The precipitate when formed is redissolved. Now add cyanide of potassium until all the blue color disappears. Then filter, and work the solution warm with active battery power, using a copper anode. After the article has received a sufficient coating it may be

scratch-brushed, and is then ready for the silvering solution.—*Dental Cosmos*.

How to Clean Bones.

R Soda ash.....1 pound.
Lime (burned)..... $\frac{1}{2}$ "
Hot water.....3 quarts.

Mix, and soak the bones for twenty-four hours in the liquid; wash them thoroughly and bleach them.—*Druggists' Circular*.

Moth Powder.

Lupulin (the flower of hops), 1 drachm; Scotch snuff, 2 ounces; camphor gum, 1 ounce; black pepper, 1 ounce; cedar saw-dust, 4 ounces; mix thoroughly, and strew among the furs and woollens to be protected.—*Druggists' Circular*.

To detect Sulphuric Acid in Vinegar.

An ounce of the vinegar to be examined is put into a small porcelain capsule, over a water-bath, and evaporated to about half a drachm, or to the consistence of a thin extract; when cool, half a fluid ounce of stronger alcohol is to be added and thoroughly triturated. The free sulphuric acid, if present, will be taken up by the alcohol to the exclusion of any sulphates. Allow the alcoholic solution to stand several hours and filter; to the filtrate add one fluid ounce of distilled water, and evaporate the alcohol off by gentle heat, over a sand-bath; when free from alcohol it is set aside for several hours, and then again filtered. To the filtrate, acidulated with hydrochloric acid, add a few drops of a solution of chloride of barium, and a white precipitate of sulphate of barium will result, if the sample of vinegar has been adulterated with sulphuric acid.—*American Journal of Pharmacy*.

Catarrh Snuff.

R Lundyfoot snuff,
Black rappée snuff, ss... $\frac{1}{2}$ l.
Powd. saarabacca.....3 iv.
Mix well.—*Druggists' Circular*.

Delfort's Baking Powder

Is said to consist of

Alum.....5 ounces.
Bicarbonate of soda..... $2\frac{1}{2}$ "
Bicarbonate of ammonia.. $\frac{1}{2}$ "
Arrowroot.....4 "

As we have never had occasion to use it, we cannot say whether it is "good" or not.

Another powder, which is probably better than Delfort's, is made by mixing
Tartaric acid.....8 ounces.
Bicarbonate of soda.....9 "
Arrowroot or rice flour...10 "

—*Druggists' Circular*.

Preservation of Subjects for Dissection.

In the *Progreso Medico*, April 1, we see it stated that a certain Professor Gailery has submitted to the approbation of the Royal Academy of Medicine of Belgium a very simple method of preserving subjects. He placed a dead body, brought from the hospital of St. Peter, on a table in the amphitheatre, and covered it completely with a sheet wet with a solution of phenic acid in the proportion of two per cent.; afterwards, every four or five days he pours over the body a certain quantity of the same solution. The first result was the absence of mephitic emanations; and in examining the body from time to time it was found to preserve almost the same appearance as it had at death. The walls of the abdomen gradually sank. The experiment has lasted for six months, and the body remains in the same condition. This is a most important discovery.—*Medical Press and Circular*.

Cement for Glass and Porcelain.

The very best of this kind, which will withstand moisture, and even a moderate degree of heat, is the one proposed by Berzelius, and for the last year or so sold by enterprising venders in the streets of New York. It is nothing but the curd of skimmed milk (obtained by the addi-

tion of vinegar or rennet), beaten to a paste with quicklime in fine powder. A better quality than this is obtained in the following way:—Add vinegar, one-half pint, to skimmed milk one-half pint; mix the curd with the whites of five eggs, well beaten, and enough quicklime to form a paste.—*Druggists' Circular*.

To Re-japan.

Old trays may be re-japaned by the following process. First clean them thoroughly with soap and water and a little rotten stone; then dry them by wiping and exposure to the fire. Next, get some good copal varnish, mix it with some bronze powder, and apply with a brush to the denuded parts. After which set the tea-tray in an oven at a heat of 212° to 300° until the varnish is dry. Two coats will make it equal to new.—*Technologist*.

To Etch on Glass.

To etch on glass with fluor spar, cover the glass with beeswax by melting the wax and running it over the glass, about one sixteenth of an inch thick, then write on it with a needle, after which sprinkle some fluor spar upon the writing, and pour sulphuric acid upon it. Let it stand for ten or twelve hours, then wash off the superfluous acid, take off the wax and wash the glass clean. It will then be seen that the fluor spar has eaten away the glass on those parts not protected by the wax.—*Technologist*.

Hard and Soft Boiled Eggs.

It is well known that a soft-boiled egg is more easily digested than a hard-boiled one; but the difficulty is in the white, not in the yolk. Experiments have shown that the gastric juice will not act readily on the tough, tenacious structure of firmly-coagulated white of egg, even when cut in pieces as small as peas—or as fine as people usually chew their food—while it acts with facility on the more

brittle yolk. To cook eggs so that they will be easily digested, put them into boiling water sufficient to cover them, and let them remain ten or fifteen minutes; keep the water nearly up to the boiling point, but do not let it reach that point. Fresh eggs will cook sooner than old ones, and small ones than large ones. By this process the yolks will be well cooked, while the white does not become tough and hard to digest.—*Food Journal*.

New Detonating Mixture.

A new detonating mixture is made by bringing together equal parts of nitrate of potash and of acetate of soda; these substances, when exposed to heat, enter into new combinations, in which the salts are converted into gases, with a violent explosion.—*Harper's Monthly*.

Ether Glue.

An excellent liquid glue, according to Prof. Maisch, is made by dissolving glue to saturation in nitric ether. This glue solution cannot be made too thick, as the solvent will only take up a certain amount, and is twice as tenacious as that made with hot water. It is much improved, and becomes very capable of resisting dampness, by dissolving some caoutchouc, previously cut into very small pieces.

Painting on Tin Foil.

In the *Comptes Rendus* for April, is an elaborate memoir on this subject, by C. Daniel.

To Cut Glass with a File.

The *Polytechnic Journal* says to cut glass with a file it is only necessary to moisten it with a solution of camphor in oil of turpentine.—*L'Union Pharmaceutique*.

Currant Wine.

Take two quarts of currant juice and twenty-four pounds of good loaf or

twenty-five pounds of lump sugar to one anker, dissolve the sugar in fresh, well-tasted spring water, mix both in the barrel, fill it up to the bung-hole with well-water, put the barrel in a chamber which is not too warm, or in a cellar which is airy but not too deep; collect the juice, which is driven out of the bung-hole by the fermentation, in a vessel placed underneath it, and pour it back again or else supply the deficiency every day by fresh well-water, up to the bung-hole. After six to eight weeks bring the wine, if bubbles no longer rise from the bottom, on the stand in the cellar, and bung the barrel, after six to eight weeks, when not the slightest noise is to be heard. Draw it off carefully into bottles, first in February or March, in the best way through a quill, in order that the wine may appear clear; cork the bottles without sealing them, and store them up, standing. The greater attention you pay to this, the greater will be your joy at the wine. In this recipe there is given at the same time a recipe for the manufacture of wine from most berries and fruits. For it is self-evident, that plums, blackberries, cherries, huckleberries, mulberries, apricots, pears, apples, etc., will also yield their must.—*Fruit and Wine Journal*.

Apparent Death and its Detection.

Dr. M. Rosenthal has found (*Wiener Medizinische Presse*, May 5 and 12) that the susceptibility of the muscles to the faradic current persists from one and a half hours to three hours after death, and is then extinguished. It continues longer in individuals who have died of acute affections than in those who have succumbed to chronic diseases. In a case of apparent death, he was able to demonstrate, by showing that the muscles still responded to the interrupted current, that life was not extinct, although death from convulsion (hysterical) was supposed to have taken place. He concluded

cal current renders the diagnosis of death possible even before the occurrence of rigor mortis, and may be looked upon in cases of apparent death as the most reliable and delicate test of the irritability of the muscles and nerves.—*Phila. Med. Times*.

Diamond Cement.

Diamond cement, so very useful for repairing broken china, ornaments, jewelry, nicknacks, is made as follows. Take half an ounce of gum ammoniac and a tablespoonful of water; melt them together till they form a milky fluid. Then take one ounce of isinglass and six wineglassfuls of water; boil together till the quantity is reduced one-half; then add one wineglassful and a half of strong spirits of wine. Boil this mixture for three minutes, and then strain it through muslin, adding after, while hot, the ammoniacal fluid formerly made. Finally add half an ounce of tincture of mastic resin. The cement thus made is best preserved in small phials, in which it sets when cold. When required for use, it can be liquefied by placing the phial in a cup of boiling water.—*Technologist*.

Ink.

In the recipes generally given for making ink, it is recommended to *boil* the ingredients. This is a very serious mistake. It should always be made with cold water. By this latter process, more time is of course necessary to make it; but then the ink is very superior, and entirely free from extractive matter which has no inky quality, and which only tends to clog the pen and to turn the ink ropy and mouldy. Take gallnuts, broken, one pound; sulphate of iron, half a pound; gum acacia and sugar candy, of each a quarter of a pound; water, three quarts. Place the whole of these ingredients in a vessel where they can be agitated once a day; after standing for a fortnight or three weeks the ink is ready

for use. Logwood and similar materials are often advised to be used in conjunction with the gallnuts; but they serve no good purpose, unless it be to make a cheaper article which fades rapidly.—*Technologist.*

Indorsing Ink.

Indorsing ink, black and colored. To make one pound, take balsam of copai-ba, nine ounces; lamp-black, three ounces; indigo and Prussian blue, of each one ounce and a half; Indian red, three quarters of an ounce, and dry yellow soap, three ounces; grind all these ingredients on a slab to an impalpable smoothness, and the ink is then fit for use. The colors may be varied for different inks, such as chrome yellow and indigo for green ink; carmine and Indian red for red ink, vermilion, verdigris, etc. For such the lamp-black and other coloring are to be left out of the first recipe, but the other ingredients remain the same.—*Technologist.*

To Fasten Leather on Metal.

To fasten leather upon metal, you should first wash the metal with a hot solution of gelatine, and steep the leather previously in a hot infusion of gallnuts. Then press the leather upon the surface of the metal and allow it to cool, when it will be found to adhere so firmly that it cannot be separated without tearing.—*Technologist.*

Cheap Scent for Hair Oil.

Oil lemon..... 2 oz.
 " bergamot..... 1 oz.
 " lavand.,
 " caryoph.,
 " cassia, of each..... $\frac{1}{2}$ drachm.
 —*Canada Pharmacist.*

Arsenious Acid and Albumen.

The preservation of albumen for manufacturing purposes is a problem of much

interest, in view of the great use of this substance in the arts, one method consisting in the addition of a slight amount of arsenious acid, or arsenite of soda. The use of the former is, however, sometimes inconvenient, on account of the great insolubility; and that of the latter is occasionally objectionable on account of its alkaline action affecting the application of the albumen. For the purpose of obviating these objections, Paraf suggested the boiling of the arsenious acid with glycerine, in which it is quite soluble; after allowing the solution to cool, and to stand for twenty-four hours, a few drops may be added to the albumen. The same substance can be added to gum-arabic, paste, and other substances, to prevent fermentation, putrefaction, and the development of fungi. It will, of course, be understood that arsenic in this preparation is highly poisonous.—*Harper's Monthly.*

Transparent Green Varnish.

A beautiful transparent green varnish is made by taking a small quantity of "Chinese blue," with about twice the amount of finely-powdered chromate of potash, and stirring these in copal varnish thinned with turpentine. A thorough grinding of this mixture must be made for the purpose of intimately incorporating the ingredients, as otherwise it will not be transparent. A preponderance of chromate of potash gives a yellowish shade to the green, and a deficiency increases the amount of blue. This varnish, thus colored, produces a very striking effect in japanned goods, paper-hangings, etc., and can be made very cheaply.—*Harper's Monthly.*

Gilding and Silvering Silk.

According to a formula published by Grüne, for silvering or gilding silk, the silk is to be soaked with a 5 per cent. solution of iodide of potassium, and dried; then (in non-actinic light) dipped in a 5 per cent. solution of nitrate of silver, containing a few drops of nitric

acid, and well drained; next exposed for a few minutes to sunlight, and then dipped in a 2 per cent. solution of sulphate of iron. It immediately becomes gray, from reduction of metallic silver, and, after washing and drying, only requires burnishing in order to acquire the metallic lustre. By repeating this treatment, varied, however, by adding a little free iodine to the solution of iodide of potassium, the silver deposit becomes stronger. By laying the silvered silk in a very weak solution of chloride of gold, the silver becomes chloride, and gold is deposited; and by then removing the chloride of silver by a solution of hyposulphite of soda, washing, drying, and burnishing, the appearance of gilding is produced, if the deposit of metal be sufficiently thick. The purest chemicals must be used in order to secure satisfactory results.—*Harper's Monthly*.

House Drainage.

One of the most important inquiries in taking a house should be as to the efficiency of the drains, for upon this will often depend its healthfulness, and therefore its suitability for habitation. It is not sufficient that the local sanitary authorities of the village, town, or neighborhood in which a house is situated, have done their utmost to secure healthfulness by the provision of stringent laws and as perfect a system of general drainage and sewerage as the means and advice at their disposal are capable of; much also depends upon the individual drainage arrangements of each house; so that, in spite of all their precautions, much of the ultimate success of their labors is dependent upon the builders of houses, over whom, in the details of their internal arrangements, they cannot well exercise any absolute control.—*Food Journal*.

Colored Cements.

A writer in *Comptes Rendus* states that colored cements which harden rapidly may be made as follows: He takes a

solution of silicate of soda (sp. gr., 1.298) and adds to it, while stirring, first pulverized and previously washed, lixiviated chalk, so as to form a thick mass, like butter, to which are added, for coloring purposes, the following substances: Finely pulverized sulphuret of antimony for black, iron filings for gray, zinc dust for whitish gray, carbonate of copper for bright green, oxide of chromium for deep green, cobalt blue for blue, red lead for orange, vermilion for bright red, and carmine for a violet hue. This cement hardens within from six to eight hours, and may afterward be polished, becoming like marble.—*Druggists' Circular*.

White Gutta-percha.

The *Journal of Applied Chemistry* gives the following method of preparing this for dentists' use and for other purposes: Four ounces of pure gutta-percha are digested with five pounds of methyl-chloroform until the solution is thin enough to pass through filtering-paper. It is then filtered (an additional pound of chloroform will facilitate this), and should then be clear and nearly colorless. Alcohol is now added in sufficient quantity to precipitate the gutta-percha in a voluminous white mass, which is washed with alcohol, pressed in a cloth, and dried in the air. It must finally be boiled in water in a porcelain vessel for half an hour, and while still hot rolled into sticks. The chloroform can be separated from the alcohol by adding water, and the alcohol recovered by distillation.—*Druggists' Circular*.

Unguentum Diachyli.

(HEBRA'S.)

℞ Olei olivarum opt., ℥ xv.;
Lithargyri, ℥ iij-3 vj.;
Coque; dein. adde
Olei Lavandulæ, ℥ ij.
Misce. Fiat unguent.

—*Phila. Med. Times*.

Opal-Glass.

Artificial sulphate of baryta, spread with soluble silicate of soda or potassa

upon glass, imparts to it a fine milk-white color. After a few days the baryta has formed a solid mass with the silicic acid, so that it will withstand the action of hot water. By means of a high temperature, this layer is changed into a fine white enamel.—*Polyt. Notizblatt*, 1871, No. 7, in *Pharmacist*.

Testing Ethylic and Acetic Ethers for Alcohol. (C. Frederking.)

In a graduated glass tube equal volumes of ether and anhydrous glycerine are thoroughly mixed; the alcohol contained in the ether is taken up by the glycerine, and its volume increased, whereas that of the ether decreases by the amount of alcohol contained in it. Ether may therefore be deprived of water as well as alcohol previous to its rectification, in order to produce it pure, and the glycerine mixed with the water or alcohol may again be obtained pure by evaporation. In this manner essential oils may also be tested with glycerine, for the amount of alcohol fraudulently added.—*Polyt. Centralblatt*, 1871, p. 728, in *Pharmacist*.

Caoutchouc Enamel, for Metallic Surfaces.

Gutta-percha or India-rubber is dissolved in oil of turpentine or benzine, sulphur is then added to the solution in the proportion of half a pound to every pound of caoutchouc, and some powdered feldspar, or gypsum, or pumice-stone, and the mixture colored by any mineral pigment. The mass thus obtained is then spread upon the metal to be covered, and exposed to a temperature of about 120–160° C. A very shining enamel is formed, capable of receiving a very good polish. This process was patented by W. R. Lake, of London, for G. T. Chapmann, in New York.—*Ber. d. D. Chem. Gesellschaft zu Berlin*, 1871, No. 9, in *Pharmacist*.

Platinum Black.

Prof. J. Lawrence Smith has found that the platin-chlorides of the alkalies can be readily reduced at a temperature of from 400° to 500° F., by means of ordinary illuminating gas. The operation is simply performed by placing the double chloride in a porcelain capsule covered with a piece of mica, and applying heat by means of a Bunsen burner provided with a rosette. Meantime, the gas is conveyed to the interior of the capsule by a tube passing through an orifice in the mica cover. The product is to be thoroughly washed with water to remove alkaline chlorides, and the residue, dried at 220° F., is ready for use.—*Amer. Chemist*, in *Pharmacist*.

New Method of Preparing Potassium.

Prof. A. E. Dolbear has obtained this metal, in small quantity, by reducing the di-potassic sulphide by means of iron. The salt in question is intimately mixed with iron filings, and subjected to a bright red heat, in a suitable distillatory apparatus, the products of distillation being received in naphtha. The reaction is simple, and may thus be represented: $\text{—K}_2\text{S} + \text{Fe} = \text{FeS} + \text{K}$. The author suggests a similar method for the preparation of sodium.—*Ibid.*, in *Pharmacist*.

Varnish for Light Colored Woods.

Dissolve 2½ ounces of gum shellac in one pint of 95 per cent. alcohol, slightly heated, then boil for five minutes with 5 ounces of freshly burned animal charcoal (bone black); filter while hot. If the color be not entirely removed by this process it may be repeated with an additional quantity of bone black. The varnish should be applied in a warm room, which is free from dust. It dries quickly, and will not "bloom."—*Physician & Pharmacist*.

To take Bruises out of Furniture.

Wet the part with warm water; double a piece of brown paper five or six times, soak it in warm water, and lay it on the place; apply on that a warm, but not hot, flat-iron till the water is evaporated.

If the bruise be not gone, repeat the process. After two or three applications, the dent or bruise will be raised to the surface. If the bruise be small, merely soak it with warm water, and hold a red hot iron near the surface, keeping the surface continually wet—the bruise will soon disappear.—*Druggists' Circular*.

Detersive Paste for Removing Grease from Silk.

Rub together fine French chalk and lavender to the consistence of a thin paste, and apply thoroughly to the spots with the fingers; place a sheet of brown or blotting paper above and below the silk, and smooth it with a moderately heated iron. The French chalk may then be removed by brushing.—*Physician & Pharmacist*.

Tonic Tooth-Powder.

Triturate well together one ounce of pulverized Peruvian bark, one ounce of pulverized white castile soap, and two ounces of the best prepared chalk. It may be flavored by adding a little of the oils of wintergreen and rosemary, with the latter in a very small proportion. The powder is not only good for the teeth, but also a preventive of, and a remedy for, spongy gums. Another very good tooth-powder may be prepared by the addition of one ounce of pulverized orris-root to the above. The addition of bole armenian to tooth-powders is only for the purpose of coloring them, and is not of the slightest benefit. The Peruvian bark will impart sufficient coloring to this preparation.—*Physician & Pharmacist*.

To Wash Silk.

Half a pint of gin, four ounces of soft soap, and two ounces of honey, well shaken. Wet a sponge with the mixture, and rub the silk, which should be spread upon the table. Then wash it through two waters, in which put two or three spoonfuls of ox-gall, which will brighten

the colors and prevent them running. Do not wring the silk, but hang it up to dry, and while damp iron it. The lady who furnishes this recipe says she has washed a green silk dress by it, and it looks as good as new.—*Physician & Pharmacist*.

Weil's Jelly for Invalids.

Take 4 Calf's feet.
2 pounds of beef.
1 old chicken.

Boil them together one afternoon in four quarts of water, with half an ounce of salt, skimming as required. During the last hour of the cooking add a small (half-pound) pike. Pour off the liquor and allow to cool during the night. In the morning skim off the fat and clarify. To do this, warm the jelly slightly and add the whipped whites of eggs with the shell. Boil until flocks of albumen form, and the jelly becomes clear on standing. Take from the fire and wait until the liquid has settled. Filter through a napkin, add to the clear filtrate two ounces of Liebig's Extract. Pour the liquor into suitable moulds, and set aside to cool.—*Diätetisches Koch-Buch, by Jos. Weil, of Freiburg, 1871.*

Jelly of Ox-Muzzle.

Take a slightly-stewed ox-muzzle, a similar foot, wash clean, cut in small pieces, and pour over enough of flesh broth to just cover; add the rind of a lemon cut small, a whole onion, with its adherent roots, salt in considerable quantity; boil for about two hours.

During the latter part of the cooking a

Little white pepper may or not be added, according to taste. When the fluid becomes thick enough the onion is to be removed. There is then to be added a beef tongue previously prepared. The tongue should be one not too strongly salted, and but slightly smoked, and should be slightly stewed and cut into small pieces. After the addition of the tongue the whole should be cooked a quarter of an hour longer. The moulds must now be prepared by pouring cold water into them, so that the jelly will come out readily. The pieces of meat fished out of the preparation must now be evenly distributed through the moulds, and the liquor strained through a napkin be poured into the receptacles, which must then be set aside to cool.—*Ibid.*

A Table Mustard.

Take of Powdered coriander..	5 parts.
Cloves.....	5 "
Cinnamon.....	7 "
Black mustard.....	125 "
White mustard.....	280 "
Sugar.....	280 "

This mixture is then brought to the proper consistency by the addition of vinegar, and afterward placed in a stone jar, in a warm spot, to ripen. The vessel should remain open, to allow the escape of the excess of mustard oil.—*Ibid.*

Fragrant Sozodont.

1. Sapo hispaniola..... $\frac{3}{4}$ i.
Aqua pura..... $\frac{3}{4}$ viij.
Spt. vini rect..... $\frac{3}{4}$ vi.
Syr. simplex..... $\frac{3}{4}$ v.
Tinct. myrrh,
" cinch. comp., ss. $\frac{3}{4}$ i.
Ol. gaulth..... gtt. xij.
Santalum..... q. s. to color.

2. Make a not too concentrated tincture of quillaya bark with diluted alcohol, add one-third glycerine and perfume to suit.

[1 Part oil peppermint to 6 oil bergamot.].—*Druggists' Circular.*

Polish for Wood-work.

The Society of Sciences in Hamburg has recently published the following:

Add to 1 kilo. of fluid copal varnish 15.620 grms. of drying linseed oil, and heat until they combine. Apply this to the wood after having given it a coat of gelatine and dry carefully. It is well to finish the article with a coat of wax dissolved in ether.—*American Chemist.*

Soap for Stiffening Wool and Fulling Cloth.

BY M. DEHNASSE.

Dissolve in as little water as possible 100 kilos. of hard soap, 50 of glue, and 15 of calcined soda. To stiffen goods with this mixture, dissolve one part of this soap in 10 parts of water, and add sufficient oil to form an emulsion.—*American Chemist.*

Artificial Water-Lime.

It has been long known to chemists that water-lime consists substantially of quick-lime, burnt clay, and a small portion of the oxides of iron and magnesia, but scarcely any effort has been made to utilize this knowledge. All yellow or red clays contain iron, and most specimens of lime in use contain the required magnesia. If burnt clay, or brick dust in the fine powder, be mixed with an equal weight of fresh-slacked lime, and twice this weight of clean, sharp sand be added, a compound will be formed which will harden under water equal to the best hydraulic cement.—*Druggists' Circular.*

Water-proof Glue.

Ordinary glue can be rendered insoluble in water by adding to the water with which it is mixed, when required for use, a small quantity of bichromate of potash, and exposing the articles to which it is applied to the light. Chromic acid has the property of rendering glue and gelatine insoluble. It is probable that paper could be rendered impervious to water

by pasting the sheets with this prepared glue. The bichromate is said to render rubber particularly hard and unattackable by hot water. The proportion of bichromate to be taken must be ascertained by experiment; for most purposes one-fifth of the amount of glue employed will be found sufficient.—*Exchange*.

Furniture Varnish.

The most common varnish of this kind is prepared by dissolving—

White wax..... 1 pound, in
Oil of turpentine (rectified). 4 pounds.

—*Druggists' Circular*.

Solution of Shellac in Water.

The shellac is broken up, covered with a concentrated solution of carbonate of ammonia, and boiled, preferably on a water-bath, till the ammoniacal smell has disappeared. Fresh solution is added, and the boiling continued till the shellac forms a coherent, somewhat sponge-like mass. After all the carbonate of ammonia is expelled by boiling, this mass is readily dissolved by pouring hot water over it. A kind of wax or soap will generally be found floating on the surface after cooling, from which the solution may be separated by straining. This solution, brought on paper, cloth, etc., dries rapidly, and leaves a thin, coherent, lustrous, and firmly-adhering film of shellac. Such a solution, of course, cannot harm the fibre; but as it is generally colored, even when bleached shellac is used, it will probably not be applicable to light colors.—*Manufacturers' Review*.

Photographic Collodion.

In the *Photographische Mittheilungen*, No. 93, Dr. Van Monckhoven proposes the following new method of preparing collodion:

Dissolve 40 grammes pyroxiline of no matter what quality in 1 litre each of alcohol and ether, pour the liquid into a vessel holding 10 litres of water and shake well. The resulting precipitated pyroxiline is placed upon a filter of mastic,

washed and dried, and is found to weigh from 20 to 35 grammes. This product is only feebly inflammable, almost totally soluble in alcohol, and even if obtained from the most inferior gun-cotton it will produce very superior collodion. No matter in what manner the collodion is iodized, its consistency will remain the same. Iodide of cadmium does not thicken it, as is the case with ordinary collodion. Neither do iodides of sodium and ammonium make it thinner.

Coloring of Paper and Leather with Aniline Lakes.

F. SPRINGMUEHL.

A mixture of alcoholic solutions of aniline colors and gums is an excellent means for coloring paper and leather.—*Musterzeitung*, No. 41.

F. Springmuhl, says, *Polytechnisches Notizblatt*, No. 6, for dyeing red, fuchsin, soluble in water, is dissolved in water of a temperature of 26° to 30° C., and applied with a brush, no mordant being used. For violet, also, that soluble in water is preferable, and the solution should contain a little sulphate of aluminium. Rapidity is required in applying it to prevent its striking through. Blue does not so readily penetrate the leather, and is applied in dilute, light-blue solutions, darker shades being produced by repeating the operation several times. As mordant, ammonia salt, alum, or chromate of potash may be used. Green: the leather is first brushed over with sulphate of ammonia solution and rinsed off; the solution of iodine green is then applied. If picric acid be used, it must not be put in the green solution, but applied by itself, either before or after the green.

For yellow, picric acid is preferred; and for brown, wood colors.—*American Chemist*, July, 1872.

The Filtration of Water.

Artificial filters for cities may be made by having basins of masonry, on the bottom of which large stones, then smaller,

then gravel, and finally fine sand is laid, and allowing the water to percolate this layer. About an inch of the upper layer of sand will hold the most of the filtered impurities, and when this is removed, and replaced by a fresh amount of sand, the filter may be considered as cleansed. Filtering, by causing the water to pass up from below through such a layer, has been found to be insufficient. The filter, as first described, may last for some months before requiring to be cleansed, or, in some cases of heavy rain-falls, only some days. A clear water basin is necessary for the reception and distribution of the water after filtering, and should be covered over, and at least large enough to hold one day's supply. The filtering bed of the Chelsea Water-works is given as follows:

Fine sand.....	4 feet.
Coarse "	4 "
Pieces of slate....	6 inches.
Fine gravel.....	1 " 6 "
Coarse "	1 " 6 "

The layer of the Longchamp basin consists of—

Fine sand.....	0.80 metres.
Medium sand....	0.08 "
Coarser sand	0.18 "
Fine gravel	0.42 "

Sifted stone passed through a ring of 16 decimetres area 0.12.—*Ibid.*

To Cut and Bore India-Rubber Corks.

Dip the knife or cork-borer in solution of caustic potash or soda. The strength is of very little consequence, but it should not be weaker than the ordinary reagent solution. Alcohol is generally recommended, and it works well until it evaporates, which is generally long before the cork is cut or bored through, and more has to be applied; water acts just as well as alcohol, and lasts longer. When, however, a tolerably sharp knife is moistened with soda-lye, it goes through india-rubber quite as easily as through common cork; and the same may be said of a

cork-borer, of whatever size. I have frequently bored inch-holes in large caoutchouc stoppers, perfectly smooth and cylindrical, by this method. In order to finish the hole without the usual contraction of its diameter, the stopper should be held firmly against a flat surface of common cork till the borer passes into the latter.—*W. F. Donkin, in Chemical News.—Dental Cosmos.*

To mend Rubber Hose.

Cut the hose apart where it is defective; obtain a piece of iron pipe ten or twelve inches long; twist the hose over it until the ends meet, and wrap with strong twine, well waxed.—*Scientific American.*

To clean Flasks from Emery.

M. Vautherin says that when emery has become hardened around the mouths of flasks, it can be removed by allowing one or two drops of glycerine to run round the line of junction. Little by little the glycerine insinuates itself so that the cake is loosened, sometimes after a few hours, sometimes not for a day or two. When the emery is fastened by a resinous substance, alcohol must be substituted for the glycerine.—*L'Union Pharmaceutique*, August, 1872.

Preservation of Potatoes.

Speaking of potato rot, the *Food Journal* of October 1st, says:

We give an outline of the process for the benefit of those who like to try it. The raw potatoes, however much diseased, are soaked in a solution of sulphate of magnesia, after which they are left in a shed or store-room till they are quite dry, when the diseased portion will be found to have shriveled, thus arresting the decay and preserving the sound portions, which, when cut out and cooked, are said to be very good. The above was the subject of an experiment which was repeated on a large scale, and with perfect satisfaction. So

far as the preservation of potatoes by the simple process of drying is concerned, it is only a development of a plan long since practised by the natives of the interior of Peru. In this form the potato is universally used; indeed it is preferred to the fresh state. The process is very simple: the tubers which are about the size of a walnut, are sprinkled with water and exposed to the air, and become frozen during the night. The operation is repeated for three nights, after which they are dried in the sun, and are then stored away for future use. In this way, of course, they are preserved whole, but in many parts of Continental Europe potatoes are preserved in large quantities by cutting them into slices, and subjecting them to a moderate heat. Another suggestion for preserving potatoes whole has recently been submitted to the Agricultural Society of India. The writer says:

"My idea is to dip the washed roots in a hot alkaline solution for a certain time, so as to destroy all vitality without cooking the starch. This done, they should be allowed to dry in the sun, and then be kiln-dried at 135° F. The skins will not be removed. Such dried potatoes may be kept packed in chopped straw, and when required for use they will have to be soaked in water, and may then be boiled or roasted at pleasure. If well dried, they might be reduced to a meal. If the plantain can be dried, I see no reason why the potato cannot be similarly treated."

To empty Bottles in Half the Ordinary Time.

Invert the bottle and give it a rotary motion; the water will then issue in the form of a tube, allowing the air to pass up through the middle.—*Chemical News*, July 19, 1869.

Parchment Paper.

C. Campbell says that this is readily made if the paper be first saturated with

a strong solution of potash alum and then dried, before it is exposed to the sulphuric acid. The alum prevents too great action of the acid, and is with it removed at the subsequent washing.—*Vierteljahrsschr. prakt. Phar.*

The Pods of Peas.

The pods of peas are commonly thrown away as refuse after shelling, or used only for feeding cattle or pigs; but when young and tender they are an excellent vegetable, very fit for being used in soups. There is a kind of pea called the Sugar Pea, the pods of which have only a thin pellicle as an internal lining, instead of the hard lining found in other kinds, and peas of this kind are boiled in the pod and used like kidney-beans. The pods of the ordinary garden varieties are, however, of equally delicate flavor, and the only, but insuperable objection, to their use as a boiled vegetable is the hard and unamasticable interior lining. They may, however, be used in soups, being, in the first place, boiled in a separate vessel until they can be easily rubbed to pieces. This is done by means of a wooden spoon, or similar implement, and the pea-shells are then placed in a drainer having wide holes, with the water in which they were boiled, when the eatable part passes through the drainer with the water, and forms an excellent addition to soups; or a good soup may be made by merely adding to it a proper quantity of extract of meat, or of Australian cooked meat, and heating it a little. The strings and hard linings of the pods remain upon the drainer.—*Food Journal*.

Method of preserving Wooden Labels.

Wooden labels for plants to be inserted in the ground, may, it is said, be preserved for an indefinite time by first dipping them in a solution of one part copper vitriol, and twenty-four parts

water, and subsequently immersing in lime-water or a solution of gypsum.

Practical Notes on Cements.

It may be a somewhat bold assertion, but it is nevertheless a true one, that nearly every man, woman, and child in the country is interested in this subject. It is not alone the carpenter with his glue, or the professional paper-hanger and the book-binder with their paste, but it is the business man with his bottle of mucilage, the housekeeper with her cements for mending broken furniture, glass, and crockery, the school-girl with her scrap-book, the boy with his kite, and even the little girl with her toys, that feel a desire to know the best methods of preparing and using cements. We consequently find that no contribution is more acceptable to those journals that deal in practical matters than a recipe for a new cement, and the paragraph containing it is sure to be extensively republished. Now the truth is, that we do not so much require a knowledge of improved cements as of the best methods of using those that we have. Good glue leaves nothing to be desired as an article for uniting pieces of wood. When it is properly applied, the pieces united by it will part anywhere rather than through the joint. Well-made paste will cause pieces of paper, cloth, etc., to adhere to each other, and to wood, plaster, earthenware, etc., so that the very substance of the paper, cloth, etc., will give way before the paste separates; and the same is true of many cements in use for mending earthenware, glass, etc., when these are applied by persons who thoroughly understand the proper method of doing it. And yet how often do we see articles of furniture that have been joined by glue, prepared and applied by those who have had no experience in its use, which actually fall to pieces by their own weight! And how frequently do we see housekeepers purchase bottles of cement for mending broken glass, china,

etc., and condemn the vendor as a cheat, when the fact is that the very same cement, in the hands of those who know how to use it, is capable of uniting pieces of broken glass so that the joint will be the strongest part of the object!

The art of using cements depends upon certain general principles, which are easily understood and put in practice. The power which all cements have of uniting separate pieces, depends upon the strength of the cement itself, and upon its adhesion to the objects to which it is applied. Strange to say, it has been found in practice that a joint may actually exhibit a strength which is greater than that possessed by the cement when the latter exists in large masses. A bar of solid glue an inch square and a foot long is not so strong as a similar bar composed of thin strips of wood glued together; and the little sticks of cement that are sold for mending earthenware are very brittle, although they form joints that bear a great deal of rough usage, and this principle seems to be the foundation of the fact that the thinner the layer of cement, the stronger will be the joint. Most inexperienced persons err in using too much cement. Actuated by liberal motives, they are determined not to stint matters, and in their desire to use enough, they use by far too much. Let us take, for example, the case of the coarsest and simplest cement—the mixture of resin, shellac, and finely-ground brick-dust—that is so frequently sold for mending earthenware. The directions are to apply it hot; and, indeed, it cannot be used cold, since it must be melted before it can be applied to the surfaces that are to be joined. But in nine cases out of ten the broken pieces are merely warmed so far that the cement may be smeared over them, and when they are brought together a thick layer of cement is always allowed to intervene. The result is either that the joint breaks along the line of the cement, or the cement separates from one of the surfaces. If the pieces had

been made sufficiently hot to render the cement as fluid as possible, the layer of cement would have been exceedingly thin, and the adhesion between it and the surfaces to be joined have been so great that separation would have taken place anywhere else rather than along the line of union. We must, therefore, select a cement that will be as strong as possible, and we must also see that the layer of cement is as thin as it can be made without leaving any part of the surfaces bare.

The adhesion of any cement to the surface to which it is applied depends largely upon the closeness with which the cement and the surface are brought together; and this depends very much upon the condition of the surface as regards freedom from grease, dirt, and even air. It may sound strange to talk of freeing a surface from *air*, and yet the feat is not impossible. All surfaces that have been exposed for some time to the air attract a thin film of that gas, which prevents the intimate contact of other surfaces. This fact is well known to electrotypers, who find it necessary to take the utmost pains to get rid of the thin adhering layer of air which invariably attaches itself to their plates. A very striking example of the influence of this layer of air may be shown as follows:—Take a new and clean needle and lay it gently on the surface of some water, and it will float. The explanation is, that the water is prevented by the adhering layer of air from coming into contact with the needle and wetting it, and the combined influence of the buoyant power of the air and cohesion of the water is sufficient to float an ordinary sewing-needle. The easiest way to drive off this adhering air is to heat the article. If the needle be heated, it will be impossible to cause it to float until after it has cooled, and has been exposed to the air for some time; and the same process is applicable to most surfaces to which cement is to be applied.

Whenever an article is broken which

is considered worth mending, the broken surfaces should be kept scrupulously clean until such time as we are ready to repair the damage. When a valuable glass or china vessel is broken, the usual practice is to fit the surfaces together a dozen or twenty times, and rub them all over with the fingers. This is done without any object except to gratify the mere idle curiosity of the moment, but the result is that the broken edges are chipped, the surfaces are covered with the oily exudations of the fingers, and a neat and strong joint becomes unattainable. Keep the edges away from each other until you are ready to cement them together, and keep your hands off them. The same is true in regard to the joining of pieces of wood, such as broken furniture. We have seen people attempt to glue together two pieces of wood the surfaces of which were covered with old glue, the remains of former efforts to unite the parts. Such joints cannot hold even if the very best glue be used. In cases where it is desired to unite joints that have been previously imperfectly cemented, the old cement should be carefully removed. Glue may be removed by water, shellac, and resin, by means of alcohol, and other cements by means of their appropriate solvents. There are two other points that demand attention, the first being the necessity of bringing the surfaces together by means of heavy pressure. Pieces of wood that are firmly clamped together by means of powerful screw-clamps, while the glue is hardening, will adhere with a force far greater than if they were merely stuck together. In the second place, we must allow abundant time for the glue to harden. These cements that merely cool, and do not *dry* out, require very little time. Cements of which the solvents are water or alcohol dry out in a few days; but those which have an oily basis, like white-lead, require half a year to dry perfectly. People frequently attempt to use articles cemented with such compounds before the

drying process has been completed, and, as a consequence, fail in their efforts.

These general principles are applicable to all cements, and a careful observance of them will frequently enable us to attain success where others have failed.—*Harper's Bazar*.

Cement for Fixing Glass Letters.

Some say a solution of shellac in methylated spirits will be sufficient, and also water-proof. Others recommend the following cement:

Powdered orange shellac.....1 oz.
Alcohol.....2 oz.

Place the containing bottle in a warm place. Agitate frequently, until all the lac is dissolved. Apply cold. This will resist wet, and will cement strongly metals, wood, porcelain, glass, etc. Then, again, it is said a thick solution of marine glue in naphtha will answer perfectly if color is no object. But the glass must be chemically clean, and this is not always easy. The least trace of soap or grease will spoil the adhesion of any cement. Try soda or ammonia, followed by whiting and water, clean cloths, and plenty of rubbing, and let the cement dry on the letters till the surface just begins to be "tacky" before you apply them. Many excellent recipes fail on a first trial from the omission of some minute precautions which are of more importance than some suppose.

Cement for Aquaria.

Dr. G. Elliott, Meadville, Pa., gives the following formula, which he has tried and found satisfactory:

Four pounds resin, four pounds Spanish whiting, two pounds tallow.—*Dental Cosmos*.

Cement for Marble.

According to Ransome, the following mixture affords an admirable cement for marble and alabaster:

Stir up to a thick paste, by means of a

solution of soda-water glass, 10 parts Portland cement, 6 parts prepared chalk, 6 parts fine sand, 1 part of infusorial earth. An irregular piece of coarse-grained marble was broken off by means of a hammer, and the surface coated by a brush with the above paste, and the fragment inserted in its place. After twenty-four hours it was found to be firmly set, and it was difficult to recognize the place of fracture. It is not necessary to apply heat.—*Journal of Applied Chemistry*.

Cement to Resist Water.

The trouble with red lead and oil is, that it is not always able to adhere to glass. Probably the best cement is that which consists of three parts of powdered pipe-clay, one part oxide of iron, and as much linseed varnish as is sufficient to make a stiff paste; or the so-called stone cement—nine parts of pipe-clay, one of litharge, and so much linseed oil as to be of the proper consistency. This becomes as hard as iron, and adheres with great tenacity to glass or almost any other substance.—*Journal of Applied Chemistry*.

Cement for Glass and Porcelain.

Leave $\frac{1}{4}$ ounce beef bladder in tepid water until it swells up; rinse and digest in warm alcohol; dissolve $\frac{1}{4}$ ounce mastic in $\frac{1}{4}$ ounce alcohol, and pour the two solutions together and add $\frac{1}{4}$ ounce pure gum ammoniac in powder. Shake thoroughly, and evaporate to proper consistency over a water-bath. This mixture will keep in well-stoppered bottles, and when required, can be rendered soft by immersing the bottle in warm water. Apply to warm surfaces with a brush. It is said to be excellent for broken glass and porcelain.—*Journal of Applied Chemistry*.

A Good Cement.

The following has been tested for cementing wood, iron, leather, glass, paper,

and almost all kinds of household materials:

Best isinglass, half an ounce; rub it between the hands until it breaks down into a powder, put in a bottle, and put as much common acetic acid to it as will just wet the mass through; stand the bottle in some boiling water, and the paste will dissolve, and be fit to use at once; it will be solid when cold, but is easily warmed up the same as before. Leave the cork out when warming, or there is danger of bursting the bottle.

Boston Journal of Chemistry.

On the Preparation of Colored Fast-Drying Cements.

Solution of silicate of soda of 88° B. is intimately mixed with precipitated chalk, so as to form a thick plastic mass. With the addition of the following substances, cements of different colors and extraordinary solidity are produced, mostly drying in from six to eight hours, allowing of an extended application for chemical as well as industrial purposes. Using first finely-powdered sulphuret of antimony, a cement is formed, which, after solidifying, may be polished by use of an agate. 2. With limatura ferri in impalpable powder, a black cement is produced. 3. Zinc dust (so-called zinc-gray) forms a gray cement, which becomes very hard, and, after solidifying, assumes the shining white color of metallic zinc when polished with an agate. 4. Carbonate of copper forms a light green. 5. Oxide of chromium, a dark green. 6. Cobalt blue, a blue. 7. Litharge, an orange-colored. 8. Vermilion, a light-red. 9. Carmine, a violet-red cement. Solution of silicate of soda, mixed with carbonate of lime alone, forms a cement of great solidity; equal parts, by measure, of sulphuret of antimony and limatura ferri, mixed with solution of silicate of soda to a stiff paste, forms a black cement of extraordinary hardness; zinc dust and limatura ferri, in the same proportions as the preceding, form a cement

of a dark-gray color.—*Jour. f. prakt. Chemie, Bd. 2, p. 138.*—*Pharmacist.*

Black-Walnut Color on White Woods.

Furniture of pine or other white woods can easily be made to appear like black-walnut. For this purpose a solution is made consisting of three ounces of permanganate of potassa and three ounces of sulphate of magnesia, dissolved in two quarts of hot water, and applying it by means of a brush upon the surface of the wood, and when dry applying it once more. The manganate is decomposed in contact with the ligneous fibre, and a fine and durable black-walnut color is produced. Small wooden objects to be stained may be immersed in the above solution, considerably diluted, for from one to five minutes.—*Mon. de la Teinture, 1870.*—*Pharmacist.*

To detect Tallow in Wax.

M. Hardy proposes the following process:

Alcohol of 29 degrees has the same specific gravity as wax, and therefore pure wax, when placed in it, will remain suspended. If an alcohol which will hold a specimen of the suspended wax in suspension shows a higher number of degrees, some tallow has doubtless been added. Thus an alcohol marking

29.	degs.	represents	wax	100	tallow	0
39.63	"	"	"	75	"	25
50.25	"	"	"	50	"	50
60.87	"	"	"	25	"	75
71.80	"	"	"	0	"	100

—*Journal de Pharmacie.*

Ratsbane.

The following is a recipe very similar to COSTAR'S RAT EXTERMINATOR:

R Phosphorus..... 3 iij.
 Aquæ bullientis..... 3 v.

Dissolve the phosphorus in the boiling water, and while yet hot add—

Pulv. semini sinapis..... 3 ij.
 Triticæ farine..... $\frac{3}{4}$ v.
 Glycerinæ..... $\frac{3}{4}$ i.
 Axungiæ..... $\frac{3}{4}$ iss.
 Pulv. sacch. albi..... $\frac{3}{4}$ ij.

Mix. Put up in 1-ounce tin boxes.

Directions: Spread on bread like butter, strew white sugar on top, and then cut in small squares.

It will exterminate rats if made according to directions.

The *Chicago Pharmacist* commends the following formula:

Take of Starch..... 8 ounces,
 Flour..... 24 “
 Glycerine..... 24 fluid ounces.
 Water..... 3 pints.
 Phosphorus... 2 ounces.

Upon the unpulverized starch, placed in a convenient vessel, pour one pint of water; stir up the mixture, and pass it through a No. 60 sieve into a cast-iron enamelled dish having the capacity of a gallon; add one and a half pints of water, then the flour, and mix thoroughly; now introduce the glycerine and apply heat best by means of the sand-bath, until the plasma begins to form, stirring in the meanwhile constantly with a suitable pestle; then take the vessel from the fire and stir as before while the plasma forms, so as to evenly divide it. After a few minutes re-apply heat, stirring briskly until the plasma has completely formed, and then set it aside to cool, stirring it up occasionally.

Now place six ounces of the plasma, gradually mixed with eight fluid ounces of water, into a porcelain measure having the capacity of two pints; set this into nearly boiling hot water, and when the mixture has become sufficiently hot, drop in about two drachms of the phosphorus. When this has fused, agitate the whole thoroughly with a spatula or pestle, and incorporate the remainder of the phosphorus in the same manner. By this manipulation the phosphorus is effectually extinguished without the risk of coming

in contact with the air in an inflammable condition.

After this, thicken the phosphoric emulsion with more of the reserved plasma, and finally incorporate it thoroughly with the remainder. The finished preparation is best preserved in small wide-mouthed bottles protected from the air.

Sachet Powders.

The following is from the *Chemist and Druggist* for August:

Patchouli leaves..... 8 oz.
 Laven'r flowers (lightly dried) 3 “
 Orris-root..... 2 “
 Cloves..... 1 “
 Essence bergamot..... 1 drachm.
 Essences of ambergris and musk, each..... $\frac{1}{4}$ “

The dry ingredients are to be separately reduced to powder, the scent then added, and the whole finally passed through a fine sieve, to insure perfect admixture.

For a cheap scent this may answer:

Orris-root, in coarse powder... $\frac{1}{4}$ pound.
 Rectified spirit..... 1 pint.

Exhaust by percolation, and add a few drops of essential oils, as bergamot, cloves, or otto of roses. Might be vended as “Spirit of Violets.”

Indelible Ink without Nitrate of Silver.

Dissolve 4 parts of aniline black in 16 parts by weight of alcohol, with 60 drops of strong hydrochloric acid, and dilute the dark-blue solution with 90 parts by weight of water in which 6 parts of gum-arabic has been previously dissolved. This ink is said not to attack steel pens, nor is it altered by alkalies.—*Druggists' Circular*.

Preservation of the Cadaver.

At Guy's the bodies are preserved by a method given in detail by Mr. Howse in the *Guy's Hospital Reports* for 1872. The process consists in injecting into the femoral artery of one or both sides of the

body about three pints of glycerine, in which one pound and a half of arsenic has been boiled, and in two or three days forcibly injecting, by means of a syphon, two or three gallons of pure glycerine. By this means the glycerine is made to permeate all the tissues of the body, bullæ containing glycerine not unfrequently forming on the skin. It is necessary to attend to the condition of the fingers and toes, for at first they swell up and become plump, but if left for a few days, they shrivel and dry up. This shrivelling is entirely obviated by injecting a further quantity of glycerine into the arteries. The bodies are then laid aside and covered with cloths soaked in carbolized glycerine, or are embedded in sawdust soaked with carbolic acid. The red paint may be employed at any time, but it is well to wait for a few days after the injection of the glycerine before using it. The bodies are in good condition, the skin has become dark, but the muscles are of a good color, and firm, and the nerves sufficiently tough to be readily traced out. This method, like the preceding one, is not well adapted for bodies in which a post-mortem examination has been made. The most serious objection to this process, however, is the cost, which is at least thirty shillings for each body.

At St. Thomas's the method adopted is identical with that used by Professor Marshall, to whom the authorities at this school are indebted for the details. In this process the arteries may or may not be injected with a weak solution of arsenite of potash, but Mr. Marshall objects to large quantities of arsenic being used, one or two ounces being quite sufficient for the purpose. The bodies are then immersed in a fluid consisting of twenty-four gallons of water, twenty-eight pounds of common salt, one pound and a half of nitrate of potash, and three pints of Burnett's fluid (chloride of zinc) to each body. After many trials these proportions have been found to be best adapted for preserving bodies for dissection, for if too much salt or nitrate of potash be used, the skin gets very hard. By this means Mr. Marshall has been able to pre-

serve portions of the body in good condition for demonstration for a period of ten years. This method seems to be the best that we have yet seen; it has the further advantage of being the cheapest, and we understand that the fluid in which the bodies are immersed need only to be changed once in several years. If this process be adopted, it is advisable to inject the paint within a few days of immersion.—*Medical News*.

Hair-Dye.

Harmless hair-dye is made in Greece from green walnut burs (*Juglans regia*), by extracting with water and evaporating until the regianic acid is precipitated as a black powder.

How to Make Sachets or Scent-Bags.

Various powders, etc., placed in silk bags or ornamental envelopes, are agreeable to smell of, and also economical for imparting a pleasing odor to linen and clothes as they are packed away in drawers, for they prevent moths.

For heliotrope powder take half a pound of orris-root, one quarter pound of ground rose leaves, two ounces powdered tonquin bean, one ounce vanilla bean, one-half drachm grain musk, two drops otto of roses; mix it all by sifting through a coarse sieve. This is one of the best sachets ever made, and perfumes table-cloths, sheets, pillow-cases and towels deliciously.

For lavender powder, take one pound of powdered lavender, one-quarter pound of gum benzoin, and one-quarter of an ounce of otto of lavender.

For patchouli, use one-half a pound of patchouli ground fine, and a very little of otto patchouli. This herb is often sold in its natural state as imported, and is tied up in half-pound bundles.

Sandal-wood sachet powder is good and consists of the wood ground fine. Cedar wood, when ground, forms a body for other sachet powders, and will keep moths at a distance. Dried fennel, when ground, is also used for scent-bags, and ground nutmeg is liked for this purpose.—*Exchange*.

Varnish to Prevent Rusting of Surgical Instruments.

The *Druggists' Circular* says: "There is a varnish which will protect surgical instruments from rust, but we do not recommend it for such a purpose, though it is very useful to protect steel under other circumstances. Here it is: Melt common rosin with a little Gallipoli oil and spirits of turpentine in proportions adapted to the particular case. The varnish should adhere firmly, not chip, and yet be easily removed. We have recently seen a mixture of carbolic acid and olive oil recommended in an English paper; but paraffine dissolved in benzine is said to be still better. We do not think that the simple mercurial ointment can be much improved upon for delicate instruments."

Origin of Guano.

In the last number of *NEW REMEDIES* was published a statement from a German journal, that Habel had discovered guano to be formed from protozoa. Prof. A. M. Edwards writes us that he was the first to discover the fact, and refers to the *Proceedings of the New York Lyceum*, May, 1871, for a discussion of the whole subject.

Soldering Iron and Steel.

Dr. Sieburger publishes the following methods for soldering iron and steel:—

For objects of moderate size, hard brass solder is made by fusing together 8 parts of brass and 1 part tin. Soft brass solder is composed of 6 parts brass, 1 part zinc, and 1 part tin.

For soldering small iron or steel articles, a hard silver solder composed of equal parts of fine silver and malleable brass is used, the mass being protected by borax. Soft silver solder differs from this only in the addition of $\frac{1}{8}$ part tin.

Very fine and delicate articles are soldered either with pure gold or a gold solder composed of 1 part gold, 2 parts silver, 3 parts copper.—*Scien. American*.

To Remove Rust from Iron.

Simmer the pieces in kerosene oil for a number of days. This will so soften and loosen the oxide of iron that it can be easily rubbed off.—*American Artisan*.

Culinary Essences.

BY ALBERT E. EBERT.

Flavor of Raspberry.

Take of Essence of Raspberry (artificial), one fluid ounce.

Diluted alcohol, twelve fluid ounces.

Syrup of raspberry (fruit), two fluid ounces.

Tincture of orris root (four ounces to the pint).

Tincture of cochineal, of each half a fluid ounce.

Mix.

Flavor of Strawberry.

Take of Essence of Strawberry (artificial), one fluid ounce.

Diluted alcohol, thirteen fluid ounces.

Syrup of raspberry (fruit),

Syrup of pineapple (fruit), of each six fluid drachms.

Tincture of cochineal, half a fluid ounce.

Mix.

Flavor of Almond.

Take of oil of bitter almonds, one fluid drachm.

Alcohol, 95%, ten fluid ounces.

Water, six fluid ounces.

Dissolve the oil in the alcohol and add the water, and filter.

This flavor should not be sold without a caution as to its poisonous nature, and directions as to the quantity to be used.

Flavor of Caraway.

Take of Caraway seed, bruised, one troy ounce.

Oil of caraway seed, two fluid drachms.

Diluted alcohol, sixteen fluid ounces.

Digest for 8 or 10 days, and filter.

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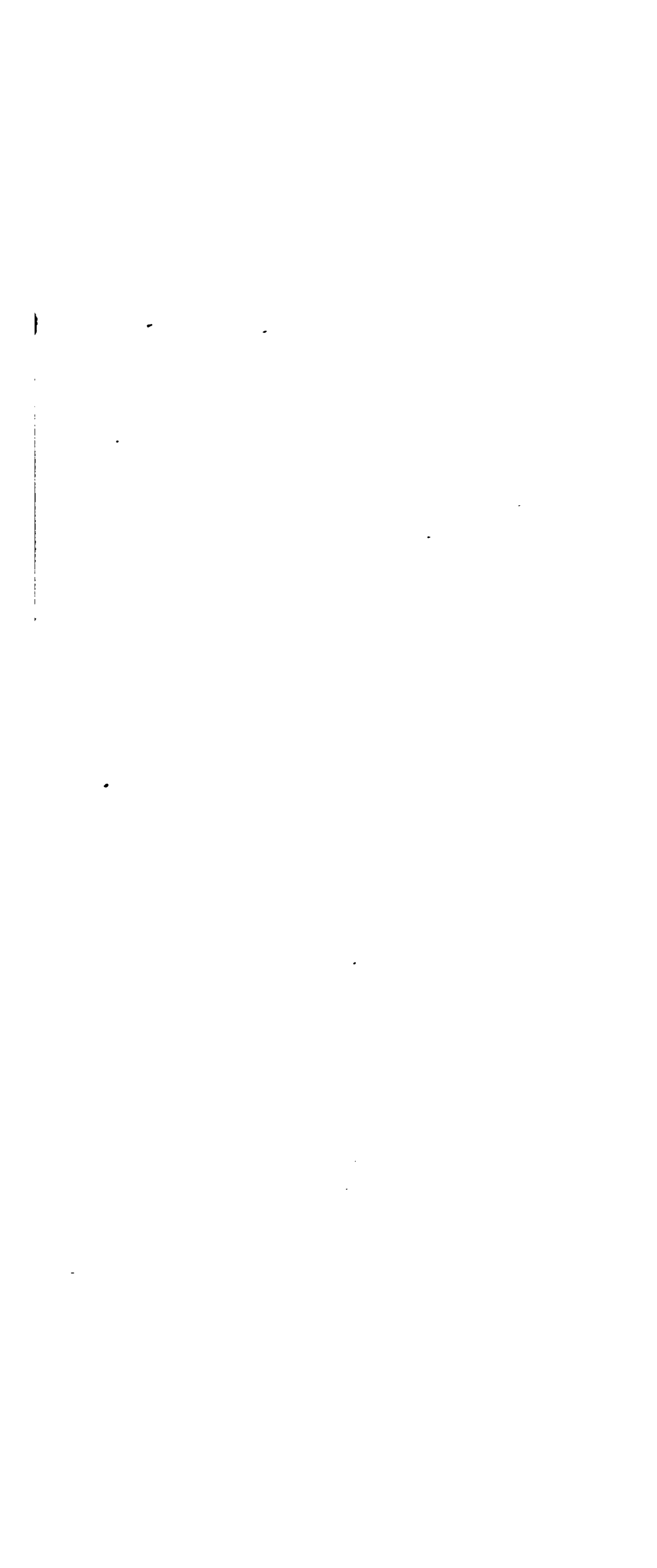
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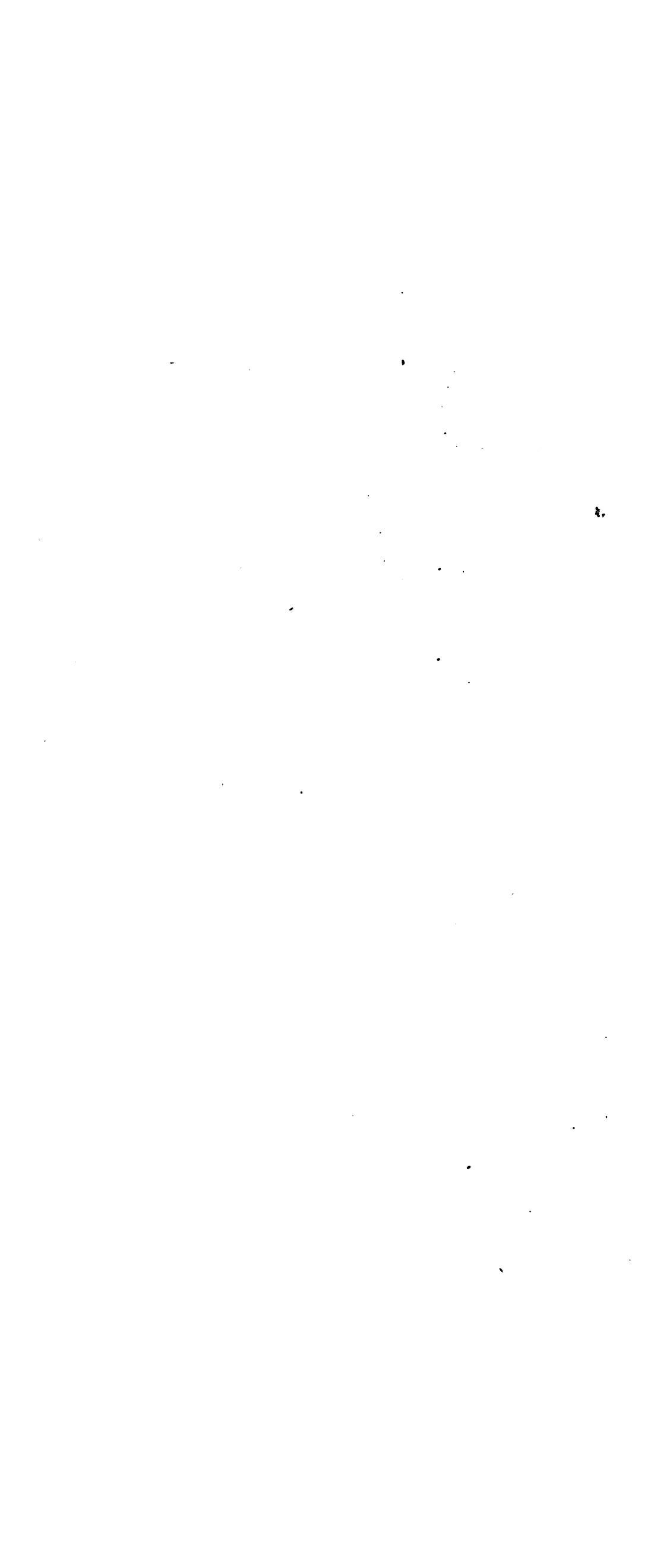
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